

THE DENTAL PRACTITIONER

and DENTAL RECORD

Including the official reports of the British Society of Periodontology, the British Society for the Study of Orthodontics, the European Orthodontic Society, the Liverpool and District Odontological Society, the North Staffordshire Society of Dental Surgeons, the Odontochirurgical Society of Scotland, and the Dental and Medical Society for the Study of Hypnosis

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References to dental literature should be recorded in the text, with the name of the author and the year of publication in parentheses. In the bibliography they should be arranged in alphabetical order in the following form, the abbreviations of periodicals being those adopted in the *World List of Scientific Periodicals* (1952), e.g. :—

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THE DENTAL PRACTITIONER AND DENTAL RECORD

Vol. VI, No. 4

December, 1955



EDITORIAL

CASE HISTORIES

ONE of the functions of a journal is to enlighten the profession on the more unusual aspects of its work, as well as imparting information on normal everyday procedures. There is, not unnaturally, a reticent attitude on the part of dentists to publishing case histories of unusual appearances in the mouth. A diagnosis may in some cases be beyond the knowledge of the average practitioner and as a result the case is lost to dental literature.

Interesting and unusual cases are usually sent for publication when all the facts are known and a complete history, before, during, and after, has been taken, and references to other quoted cases included. In many cases this is obviously impossible. Many queer and odd-looking signs and symptoms arise from time to time with no apparent explanation. In particular, radiographs may show unusual shadows which may be fact or artifact. While we would deplore a practice of postal diagnosis we are prepared to comment on anything unusual our readers come across in the course of everyday practice, particularly radiographs. The more interesting ones will be published for the edification of others.

DENTAL BOARD PUBLICATION

As part of a recruiting campaign to gain more entrants to the dental profession, the

dental board has published a short pamphlet on *Dentistry—As a Career and a Future*. This new publication is being circulated to a large selection of interested bodies, as well as to all members of the dental profession. It is written specifically to provide information to parents and their children, and it undoubtedly succeeds in its object, for it is short and to the point. The main criticism of this type of pamphlet is that in such a wide circulation quality may on occasion give way to quantity and attract the wrong type of person. This problem is, however, one for the selection committees of dental schools, who are undoubtedly aware of the special importance of maintaining quality; it does not in any way detract from the worth of the pamphlet.

The Editors take this opportunity of wishing all readers of THE DENTAL PRACTITIONER AND DENTAL RECORD a happy Christmas and a good measure of fortune in the New Year.

PERIODONTOLOGY IN THE GENERAL DENTAL SERVICE*

By D. W. MACFARLANE, L.D.S. R.C.S.

WHEN your council invited me to give this paper I was very pleased by the honour thus paid me and it was some time before I was sobered down by the thought of the task before me.

It seemed to me that you would, as teachers and private practitioners, like to hear about three aspects of the subject. First, the administrative side of the general dental service, particularly as it affects periodontology. Second, some remarks about my own practice, which should also be of interest to other associate members who work within the health service. Third, the statistical aspect, which takes two forms: one is a comparison of the proportion of periodontal treatment done in my own practice with that done, on an average, by dentists in the service as a whole. Statistical evidence of the items of treatment over the nation as a whole, showing the numbers of cases in each age group, will be represented by histograms.

All three aspects will be discussed at more or less the same time by going through the items listed on the scale of fees. The fee for each item, and my own personal assessment of the fairness of such fees, will be discussed in relation to the general level of remuneration of the service.

The scale considered is the original "1948 scale" with the fees reduced. As this may soon be replaced by a completely new one, some of what I have to say is almost past history.

Before discussing each item separately I must say a few words about periodontal treatment as a whole. In theory there is no limit to the kind or amount of treatment which may be given, because paragraph 24 of the scale reads "Fee for any other treatment not included in this scale. Such fee as the Dental Estimates Board may approve". In my own practice the bulk of periodontal treatment is

estimated under the various items of the scale, so that the potential powers of this paragraph are not often used. This is because the treatments which I am prepared to carry out myself are not of a complex nature. Where more difficult or complicated treatment is required the patient is referred to hospital.

In the general dental service all periodontal treatment except normal scaling requires the approval of the board. Urgent treatment may be commenced immediately, but approval is still required.

Exact fees are laid down for normal scaling and gingivectomy. The fees for other treatment are calculated according to the number of visits required and are estimated in advance by the dentist.

A dentist must offer the patient all the treatment necessary to render him dentally fit. It is believed that the definition of dental fitness, under the act, is that the teeth do not constitute a threat to general health. This is not a very satisfactory definition unless one is prepared to stretch the meaning of general health to include mental well-being, and the meaning of threat to be a very distant one. In practice the board normally approves any treatment which is expected to conserve the teeth and appearance is taken into consideration in deciding whether any treatment is necessary or satisfactory. My own interpretation of this is, that a patient is dentally fit when further treatment will not benefit him. For instance, if a patient has only six anterior teeth in each jaw but is able to eat to his own satisfaction, it is not always considered necessary for him to have partial dentures.

Although the dentist is obliged to offer all the necessary treatment, or to arrange for the treatment to be carried out elsewhere, the patient is not required to accept all the treatment offered.

* Given at the meeting of the British Society of Periodontology held on Monday, November 7, 1955.

EXAMINATION

Now we come to the first item on the scale of fees and this is—quite logically—examination and report. This item applies to every course of treatment, except emergency treatment, if a certain time, usually six months, has elapsed since the last examination. The fee is five shillings and it is always free to the patient. It is considered that this fee is low for periodontal cases. However, in most cases what amounts to a further examination fee of five shillings is granted, and this will be mentioned again later. The fees mentioned do not include radiological examination, nor the taking of impressions and mounting of models on an adjustable articulator. When making an examination it has to be borne in mind that a report must be made to the board of the clinical condition. I usually include in the report these salient features:—

The state of oral hygiene.

The state of the gingival margins, if abnormal.

The presence of calculus.

The depth of gingival pockets.

The mobility of the teeth.

The presence of traumatic occlusion.

The depth of individual pockets is recorded on the chart of those patients for whom this is considered necessary.

It is not always wise to undertake all the necessary treatment in the first course, for two reasons: (1) There is often some doubt about the patient's co-operation, either in improving the oral hygiene or in making regular attendances for examination. In such cases the estimate may be amended during the course of treatment, or some treatment may be left until another course. (2) Some people are not prepared to undergo the treatment if it is suggested to them all at once. For instance, scaling and instruction in oral hygiene may be given in the first course, with the intention of carrying out the more unpleasant measures later. Many people have not heard of gingivectomy or selective grinding and therefore view these operations with suspicion.

The histograms shown in this paper are compiled from figures supplied by the Dental

Estimates Board. The Board makes an analysis of 2 per cent of all estimates passed for payment, and the figures are multiplied by 50 to prepare tables showing the total numbers of various treatments in each age group. In the Report of the Ministry of Health, Part II,

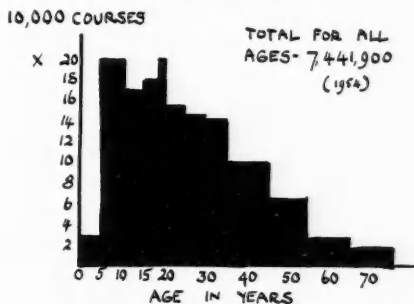


Fig. 1.—Incidence of courses of all kinds of treatment.

published by H.M.S.O., the figures are corrected to show the number of treatments per 1000 of the population in each age group. In this paper the histograms have been compiled from the uncorrected figures of the Estimates Board, because in the Ministry Report gingivectomy is included in the total with apicectomy and alveolectomy, and the total number of prolonged gum treatments per 1000 of the population was found to be too small. Also, as the age groups do not cover equal spans, averages were obtained by dividing the totals by the number of years in each group.

Fig. 1, showing the number of examinations, is slightly misleading because it does not show the number of persons examined. Many patients have two, or even three, examinations a year. This may account for the apparently high rate of examination in early age groups and the drop at age 21, when only two instead of three examinations a year are allowed. The figures showing the numbers in the age group 18-20 having three examinations a year are not readily available, but it is possible that these are not many. It is of course very likely that the drop is related to the fact that after the age of 21 the patients pay the first £1 of the cost of their treatment, which

up till then has been free. If it were not for military service the peak in the age groups 18-20 would presumably be higher still.

Mounted models are not usually prepared because it is found that the benefit to be gained from them does not merit the work involved.

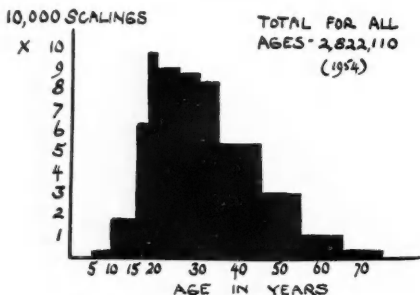


Fig. 2.—Incidence of normal scaling.

However, much use is made of radiographs, and I want to say a little about these because they are such an essential part of diagnosis. Regular patients are sent a reminder when it is time for their next examination, and bite-wing radiographs are taken as a routine. In periodontal cases where gingivectomy or extractions are probable, I take full mouth radiographs. The fees allowed are 7s. 6d. for the first film and 5s. for each subsequent film up to a maximum of £2 5s. and I consider these fees to be reasonable. Two films may be taken without prior approval, but authority must first be obtained for a greater number. I have never had a request for any radiograph refused by the Board. But in cases where full mouth radiographs have been taken, and my estimate for treatment has been prepared, the Board nearly always refers the patient for examination by a regional dental officer. I do not know if this is a routine procedure following automatically on the approval of full mouth radiographs or because the estimate includes periodontal treatment, or if there is some other reason, but it happens.

There are no figures available for radiographs which would be of present interest because the figures are not analysed according to the reasons for taking the films.

NORMAL SCALING

Now we come to the second item on the scale of fees—scaling and normal gum treatment. I do not know what normal gum treatment is, so I have always ignored it and I shall do so now. I shall take the adjective “normal” away from its proper place and apply it, for the sake of clarity, to the scaling. This is necessary because, although you may think that there is only one kind of scaling, we have to consider three kinds for the purpose of making an estimate. First there is normal scaling, then deep scaling, and finally scaling of teeth around which a gingivectomy is carried out. The fee for the last is included in the fee for the gingivectomy. All three kinds could be present in the same estimate.

It is not necessary in this paper to discuss in detail the operation of scaling, but as far as my own practice is concerned, scaling will always include polishing. You may, however, be interested to hear how normal and deep scaling is distinguished. My definition of deep scaling (there is no definition in the regulations) is quite simple—the removal of subgingival calculus. But I do not estimate for deep scaling for regular patients even if subgingival calculus is present. The patients whose estimates include deep scaling are the new and the irregular patients.

The fee for normal scaling is 12s. 6d., irrespective of the number of teeth in the mouth, or the number of teeth involved. I consider this fee is too low. Some account should be taken of the number of teeth involved. The fee for normal scaling is claimed 2,822,110 times a year. If children under 15 and all patients wearing full lower dentures are omitted from the total number of estimates, the percentage of estimates including normal scaling is about 58 per cent of the remainder, that is of those patients for whom scaling is most likely to be required.

In preparation for this paper I have analysed all my estimates paid for in six continuous months of this year, and to my surprise I find that my own figures are only 55 per cent, but if I add to this the 4 per cent of patients who have scaling done under another item of the

scale of fees, my figures are almost identical with the national average.

The incidence of the number of normal scalings depicted in Fig. 2 shows the peak in the same age group 18-20. One would expect it to be later in life if the incidence of treatment were related to the incidence of calculus, and if the proportions of people in each age group presenting themselves for treatment were the same.

Another factor which one might think would influence the shape of this histogram is that the figures from which it was made were not corrected for the proportion of the population in each age group. To check this another histogram with corrected figures was made and showed that there was no material difference.

GINGIVECTOMY

The next item on the scale to concern us is gingivectomy. This of course requires prior approval but the Estimates Board does not normally interest itself in the reasons or the prognosis. I imagine the Board thinks that if you can persuade the patient to have such an unpleasant operation you must have very good reasons for doing that operation. Any general practitioner who carried out a large number of unnecessary gingivectomies would soon lose his practice.

The payment for gingivectomy, which includes the scaling of the teeth involved, is based on units of 4 teeth, each unit carrying a fee of £1 7s. 6d. There is a maximum fee of £11. A little mental calculation will show you that in this case there is no reduction for quantity. I consider these fees to be reasonable.

Now how do I proceed about gingivectomy in my practice? I consider that in suitable cases, if the pocket depth is more than 4 mm. gingivectomy is necessary. I carry out my gingivectomies in rather small units of 4-6 teeth at a time and I prefer to carry out some scaling at the time of the operation and some afterwards. It is found that in the particular six months over which I have analysed my complete cases, I have only one gingivectomy to my credit. This is lower than my average,

but even so it is greater than the national average. The average dentist performs the operation once in every eighteen months.

It would of course be extremely hazardous to carry out a gingivectomy without special instruction in oral hygiene and I have always counted such instruction as part of the

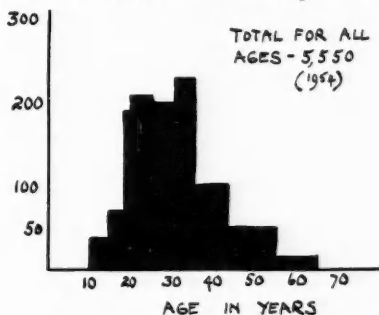


Fig. 3.—Incidence of gingivectomy.

gingivectomy, but possibly I could have claimed a separate fee under the next item on the scale which is called prolonged gum treatment.

Fig. 3 depicts the number of gingivectomies in each age group. This shows a minor peak at an early age, but I think this could be ignored, being due to the small number of cases from which the original figures were compiled. In the 2 per cent sample the total number of cases can only be about 100, and these have to be spread out over all the age groups considered. The majority of gingivectomies occur in the age groups under 35, while it was expected that more would have been done after this age. At least one can be reasonably sure that the number shown is the number of persons treated, as no one would be likely to have more than one gingivectomy in a year.

OTHER TREATMENTS

We come now to the most important item in the scale and the most neglected—No. 13, prolonged gum treatment. The most important because it includes a number of important and varied methods of treatment—treatment which should be readily available to the increasing number of middle-aged people. I say neglected,

because in the apportionment of fees it was put shamefully low, and because, regardless of fees, there are obviously thousands of people who would benefit from this kind of treatment but who, because of their own ignorance and that of dentists, are not receiving it. Here it is, as written in the scale—"Prolonged Gum Treatment (including deep scaling, correction of traumatic occlusion, instruction in oral hygiene, etc.). Such fee as the Board may approve within a range of £1 10s. to £3, or such other fee as they may in special circumstances, approve." In my experience special circumstances have never resulted in a fee greater than £3.

As I said earlier, the payment for this item is calculated on the number of visits required and I have deduced from the large number of estimates which I have had approved, that the first visit carries a fee of 12s. 6d. and subsequent visits 7s. 6d. each up to the maximum. The length of each visit does not count, only the number. The allocation of the higher fee to the first visit may be for the extra time spent in making the examination in these cases, which means in effect the additional examination fee of 5s. already mentioned.

Unlike estimates for gingivectomy, which as I have said need no report or prognosis, estimates for prolonged gum treatment must give a brief outline of the clinical condition and the prognosis. In cases where the Board does not require the opinion of a regional dental officer, approval has always been given without question to my proposed treatment. Once, however, the advice of the regional dental officer has been obtained, if his opinion is different from mine, then a good deal of time is spent in correspondence and in obtaining a third opinion from a recognized specialist. It might save a lot of the patient's and my own time if a specialist's opinion were obtained first, but for obvious reasons of self-esteem one refuses to do this as a routine.

So much for the administration. Now for the treatment. Deep scaling has already been defined. On an average this takes about four visits per patient. For correction of traumatic occlusion—this usually means selective

grinding—one visit is allowed for each position of the mandible, that is centric protrusion, and right and left lateral. Where an appliance is required to spread the load, this is estimated for separately. I do not undertake cases requiring an increase in the vertical height, by means of overlay dentures or similar, but fixed, appliances. Such cases are referred to hospital.

ORAL HYGIENE

Now we come to one of the finest things in the dental part of the health service—instruction in oral hygiene. Here we have a publicly maintained service willing to pay a private practitioner to give individual instruction at the chairside. It is a pity that it applies only to cases of established periodontal disease, because there are many patients who need instruction but who do not come within the scope of this item of the scale of fees. For such people instruction is often given free of charge.

Here is an account of a typical procedure for instruction. The patient brings his own brush, which is examined, and he gives a demonstration of his normal method. The brush is then thrown away and, using a new one from my stock, I demonstrate on models and in the mouth what I think is a better method. I then put him through his paces to see if he has grasped the essentials and finally I sell him the new brush. I don't use written or pictorial aids very much, but I do check at a later visit to see how much has been retained. There are of course people who cannot learn, but the instruction given is quite forceful. For normal purposes a nylon brush of soft grade is used with a short head and with all the tufts of the same length and cut level. I keep a stock of these and so does my nearest chemist. As other chemists in my area do not keep these or similar brushes I conclude that they are not recommended by other dentists. Advice on other aspects of oral hygiene, as well as brushing, is of course given.

The other treatment which I include under the heading of prolonged gum treatment is that of acute ulcerative gingivitis. Pressure packing and treatment by medication, methods

which I do not use myself, and other treatments requiring a number of visits such as curettage or massage, are also included under this heading.

It is to be expected that there would be more cases of prolonged gum treatment than of gingivectomy, and that is in fact the case.

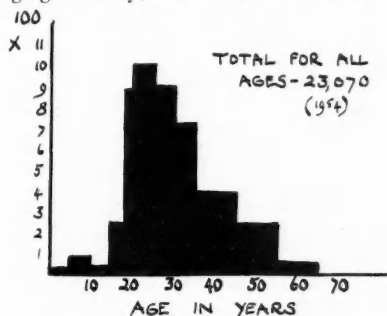


Fig. 4.—Incidence of prolonged gum treatment.

In the national average each dentist completes about 2.5 cases annually; in my own case about 18 cases annually. Fig. 4 shows the incidence of cases in age groups. This is probably an accurate representation of the number of people treated because the sample is large enough to eliminate chance errors, and very few patients are likely to have more than one course of treatment in a year. It is a pity that separate figures are not available for the different items included under this one heading. Once again the peak appears surprisingly in an early age group and I suppose this is due to the prevalence of early stages of gingivitis, particularly ulcerative gingivitis, a condition which no dentist can ignore.

CONCLUSION

This concludes the discussion of those items on the scale of fees which are of greatest interest to the periodontist. I think you will agree that a newly-qualified practitioner would be confused and discouraged by this scale and its attendant regulations. I have made or implied certain criticisms of the administrative side of the general dental service and it is only fair that I should make concrete suggestions for its improvement. These suggestions are not given in any order of importance.

1. The publication of a more detailed handbook for the practitioner with examples, so that at least the dentist receives the proper fee allowed for the work done.

2. A more elastic attitude on the part of the Board or the Regional Dental Officer when a difference of opinion occurs. In particular I

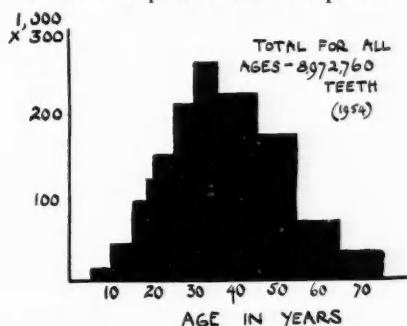


Fig. 5.—Incidence of extractions of permanent teeth.

would like to see the following change made: at present, when a patient is referred for a dental officer's opinion, the latter is asked to state what treatment is required to make the patient dentally fit. He should also be asked whether, having regard to differences of opinion that exist on dental fitness and on the treatment necessary to produce it, the treatment proposed by the dentist is a reasonable alternative, and if not, why not?

3. Metal dentures should be approved on the grounds of fixation and hygiene, not only as at present on the grounds of strength.

4. Soft toothbrushes should be available on prescription, at least in cases of ulceration.

Fig. 5, showing the number of extractions of permanent teeth, is presented as a painful and traumatic conclusion to this paper. It is seen that the peak is in the age group 30-35. We must also consider that, after the age of 20, only a small proportion of the figures for casual, or emergency, extractions are shown on this histogram as these are usually done privately. If they were included the number of extractions in the 30-50 groups would be increased. This picture is the corollary of the others. Surely some of the teeth which are

extracted in these groups could have been treated and retained.

This, then, is the general picture of periodontology in the general health services: apart from normal scaling (which I think we may assume to be the removal of supragingival calculus in most cases) very little periodontal treatment is done, and that at low fees. One of the reasons for so little being done is the unwillingness of the majority of patients to attend for regular treatment, with the result that when they reach the age at which periodontal treatment could help them, they have lost so many teeth and are wearing such unhygienic partial dentures, that it is too late. Economics also plays its part; for instance, it is unprofitable for a dentist to carry out root-treatment for casual patients, thus upsetting his appointments for a whole session. Patients

cannot, or will not, afford to pay for metal partial dentures or bridges.

But probably more periodontal treatment is done now than before the service began, and the necessity for even more treatment will occur in, say, fifteen to twenty years when it is to be hoped all those young people who are now having conservative treatment will still have complete natural dentitions. This will necessitate a profession more interested in periodontology than it is now, and I am confident that this society will play its part in stimulating the profession.

In conclusion I wish to thank my wife for drawing the histograms; my secretary, Mrs. Shepherd, for her help in analysing the treatment of my patients and for typing the manuscript; and Dr. Senior for supplying me with the analytical tables.

DISCUSSION

Mr. Parrott congratulated the Society on its choice of subject and lecturer and said that the only contribution he could make was to amplify some of the statements made in the light of his own experience.

He invited comment on the opinion of many, including the Chairman, that gingivectomy should be carried out only after deep scaling and curettage have been tried as this not infrequently achieves a degree of clinical reattachment which renders gingivectomy unnecessary. He suggested that if authorization for deep scaling, curettage, and selective grinding is granted by the Dental Estimates Board, and some six months later authorization is sought for gingivectomy, the result would be an acidulated letter from the Board implying lack of confidence in one's competence as a curettor and prognostician, and implying that gingivectomy should have been carried out in the first place.

He agreed that the fee of £3 for deep scaling, curettage, and selective grinding appears to be the maximum ever granted by the Board, and that this is "shamefully low". In a mouth of, say, 28 teeth, he usually requires an absolute minimum of three half-hour visits for scaling and curettage—segments right, left, and centre. This may be increased to four or five visits if pressure packs and/or such drugs as antiformin are used. Three visits of forty-five minutes are spent on an occlusal adjustment and at least another quarter of an hour for post-operative check and instruction in hygiene. The total minimum chairside time is two and a half hours with a maximum fee of £3. £3 for two and a half hours of difficult, tedious, precise, specialized, and valuable work. Less than the fee payable for three Class 2 amalgam fillings.

It is little wonder that, faced with a case presenting any appreciable degree of periodontal degeneration, the vast majority of practitioners in the Health Service will either extract the teeth or leave them, regardless of systemic consequence, until they virtually fall out.

A simple explanation of the peak scaling figures at ages 18 to 20 is that this is the age of maximum self-consciousness in the sexual sphere, when the majority of young women, and to a lesser extent, young men, try to make the most of their attractions and will take advantage of such superficial cleaning of the anterior teeth as the dentist feels that he can manage for a fee of 12s. 6d.

Mr. Macfarlane will undoubtedly deplore the Board's reluctance to authorize bridges for the replacement of one or two missing anterior teeth, and the consequent universality of the small tissue-borne acrylic partial denture, one of our national periodontal scourges, and the plea for a more sympathetic attitude on the part of the Board towards metal dentures on periodontal grounds will be endorsed by all.

Mr. Macfarlane is fortunate that his clientele lives within easy reach of teaching hospitals to which he can refer complicated cases, particularly those which require increasing the vertical dimension. Those on the fringe of civilization, though also tax-payers, must either do this themselves or let it go by default. It was his own bitter personal experience that it is next to impossible to treat cases of this kind under the Health Scheme without having resource to appeal.

It is doubtful whether the blame for the dearth of adequate periodontal treatment should be laid squarely upon the shoulders of the public. As a profession, we are at fault in our neglect of public dental health education, particularly at the chairside. How many dentists habitually use diagrams, photographs, and models to demonstrate the causes and progress of periodontal disease and allow their patients to appreciate the rationale of treatment?

Moreover, the institution of modern systematic training in periodontology is a relatively recent thing, which few middle-aged practitioners would have received as undergraduates. The keen practitioner might decide to equip himself by attending for a week one of your own

admirable postgraduate courses, Mr. Chairman. For this he would pay this Institute a very modest sum. He would forfeit about a hundred pounds in fees, he would continue to pay his staff in his absence, he would find his own fare and accommodation. For thus better fitting himself to implement the spirit of the National Health Act, he will receive no grant from his Executive Council. He must hope to reimburse himself by putting into practice your precepts, Mr. Chairman, at the rate of £3 for two and a half hours. I suggest that a tangible recognition by the Exchequer of the value of postgraduate education by grants to general practitioners receiving it, is an essential step in securing a higher standard of National Health dentistry.

In conclusion, Mr. Parrott felt certain that Mr. Macfarlane does good periodontal treatment for his National Health patients because he likes doing it and because his conscience drives him to it, and not because he can make a living or even begin to cover the overhead costs of his practice by doing it. When the contemptible fees payable for the real core of periodontal treatment—deep scaling, polishing, curettage, and occlusal adjustment—are analysed on a time basis and compared with the far from generous fees payable for

far less exacting operations, it is incontestably obvious that periodontology in general National Health practice can be carried out at all only in a spirit of complete philanthropy and subsidized by fillings and extractions. Granted that the Board is tied to the Scale of Fees, it still puts every possible obstacle in the way of routine periodontal treatment by referring the majority of cases to the R.D.O.

There seems to be no solution readily acceptable to the Minister of Health, who is after all but the poor creature of the Chancellor of the Exchequer. Perhaps many practitioners would thankfully refer periodontal cases to their local hospitals, if a periodontal service were instituted on the lines of the hospital orthodontic services provided by some of the more enlightened Regional Boards. But at the moment the problem of bringing the ripest fruits of periodontology to a sceptical public, persuading a filling-and-extraction-obsessed Dental Estimates Board to initial the bill and a parsimonious Minister to foot it, is as far from a solution as ever. The first essential in solving a problem is to get a good, unbiased view of it, and that is exactly what Mr. Macfarlane's most interesting and valuable paper enables us to do.

GROWTH CHANGES IN THE GLENOID FOSSA

By JAMES H. SCOTT

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THE GLENOID FOSSA AT BIRTH AND DURING FETAL LIFE

At birth the human glenoid fossa is approximately circular in shape, measuring about 9 mm. in its greatest anteroposterior diameter and about 10 mm. in its greatest mesiolateral diameter (Fig. 1). It is a shallow depression with a slight peripheral rim, which may show a small tubercle-like elevation in the region of the future postglenoid tubercle. Medially to the tubercle the rim of the fossa is deficient, and here its posterior boundary is the petrotympenic fissure. The anterior segment of the rim may take the form of a low mesiolateral elevation, which is the earliest indication of the articular eminence. At birth, however, the eminence is poorly developed. On the medial side of the fossa, and forming its boundary in this place, is the suture between the squamous temporal bone and the great wing of the sphenoid, passing back to the spine of the sphenoid, which at birth is in the form of a minute tubercle.

The fossa at birth lies at the side of the cranium and faces more in an outward direc-

tion than downwards (Fig. 2). It can be divided into a small outer portion, which is related to the posterior root of the zygomatic process, and a larger inner part lying on the outer surface of the squamous plate of the temporal bone below the level of the zygomatic root and separated by a thin plate of bone from the middle cranial fossa (Fig. 2).

The glenoid fossa lies in close relationship to the tympanic membrane, from which it is separated by the low anterior part of the tympanic bone.

If a 4½-month foetal skull is examined (Figs. 2, 3) it will be seen that the fossa does not, as at birth, face outwards, but faces as in the adult almost directly downward. At this time that part of the squamous temporal bone forming the greater part of the glenoid fossa lies at the floor of the middle cranial fossa and is not part of its side wall. Between the middle of foetal life and birth there has occurred a change in the form of the squamous temporal bone (Fig. 2). This change is probably related to growth of the temporal lobe of the brain and is probably in part the result of a shifting

in the position of the squamous temporal relative to the other elements of the temporal bone. Up until the time of birth the various

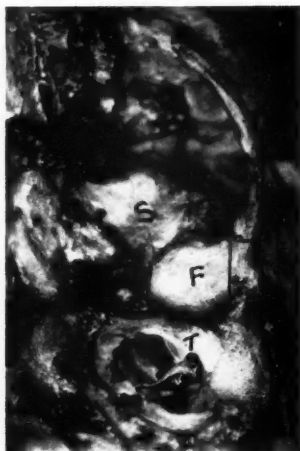


Fig. 1.—Glenoid fossa at birth viewed from below. F, Glenoid fossa; S, Great wing of sphenoid; T, Tympanic bone. Line marked a-a divides the outer zygomatic part of the fossa from the inner squamosal part. The tympanic membrane has been removed and the auditory ossicles are seen. Note the flattened circular form of the glenoid fossa. (Approx. $\times 2$.)

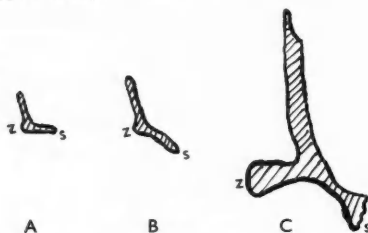


Fig. 2.—Diagram to show the growth of the glenoid fossa (mesiolateral sections through the fossa). A, Middle of fetal life; B, At birth; C, Adult. Note change in position. Z, Zygomatic process (posterior root); S, Position of the suture between the squamous part of the temporal bone and the sphenoid.

parts of the temporal bone are separate elements. The change in form of the squamous temporal bone is associated with a change in the position of the tympanic membrane, which in the fourth month of fetal life faces almost directly downward. The change in position of the membrane is brought about

by growth of the tympanic ring relative to the squamous part of the temporal bone. The membrane moves outwards in a hinge-like movement from its upper attachment to the squamous element as the tympanic ring grows outwards carrying the membrane with it. An outward movement of the temporal bone as a whole also occurs and is related to growth in width of the basi-occipital bone in front of the foramen magnum and to growth in the suture between the squamosal part of the temporal and the great wing of the sphenoid bone.

CHANGES AFTER BIRTH

In the adult the glenoid fossa comes to face downwards, as in fetal life (Fig. 4). The change in position from the condition found



Fig. 3.—Glenoid fossa in a $4\frac{1}{2}$ -month human fetus as viewed from below. F, Glenoid fossa; TM, Tympanic membrane surrounded by ring-like tympanic bone. Note relative size of fossa and tympanic membrane. (Approx. $\times 2$.)

at birth is not, however, at this stage due to any change in form of that part of the squamous temporal bone which makes up the side wall of the skull. It is largely the result of a relatively greater development of the outer zygomatic portion of the fossa. At birth this forms less than a third of the fossa; in an adult skull it forms the outer half of the fossa (Figs. 1, 4).

Growth of the zygomatic portion involves both the anterior and posterior roots of the



Fig. 4.—Glenoid fossa in an adult viewed from below. F, Glenoid fossa; A, Articular eminence. Line a-a divides outer zygomatic part from the inner squamosal part of the fossa (compare with Fig. 1). S, Great wing of sphenoid; P, Tympanic plate; T, Tympanic plate; P, Petrous part of temporal bone.



Fig. 5.—Glenoid fossa in a child of about 6 years of age viewed from below. F, Glenoid fossa with articular eminence; S, Great wing of sphenoid with the squamosal-sphenoidal suture on its lateral side. This is part of the coronal suture system and growth at this suture will separate the glenoid fossae on each side of the skull. B, Basi-occipital; P, Petrous part of temporal bone; T, Tympanic plate. Horizontal line b-b passes through the basi-occipital synchondrosis.

zygomatic arch. The posterior root comes to project outwards from the side wall of the skull, forming a shelf separating the outer region of the glenoid fossa below from the lower border of the temporal muscle above (Fig. 2). The anterior root of the arch in its growth produces the greater part of the articular eminence.

There is also some growth at the inner part of the fossa at the temporal side of the sphenotemporal suture. Bone formation in this region is apparently the result of both suture growth and surface deposition. Other changes occurring in this region up to adult life include

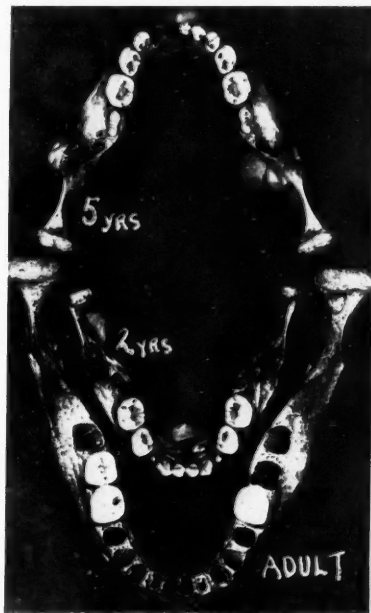


Fig. 6.—Mandibles at 2 years, 5 years, and adult age to show growth between condyles.

the great development of the tympanic bone. This is correlated with the process of surface deposition which is responsible for both the development of the zygomatic shelf between the temporal muscle and the glenoid fossa, and the change on the part of the tympanic membrane from its superficial foetal position to its adult position at the bottom of the tube-like bony auditory meatus.

If an adult temporal bone is held to a source of light a translucent area is usually seen in the roof of the fossa. Here the bone between the glenoid fossa and the cranial cavity is thin. This region corresponds in size and position to the greater part of the fossa at birth. It will be seen to face outwards as well as downwards. The thicker bony regions, around this thin central part, which make up the articular eminence, the zygomatic shelf, the inner wall of the fossa, and a strip of denser bone in front of the petrotympanic fissure, have all come into existence after the time of birth and almost entirely as a result of surface deposition of bone. There may have been some growth at the petrotympanic fissure for a short time after birth, but most of this suture growth is the result of a slight shift in suture position resulting from surface deposition at the suture margins rather than any separation of the bony elements.

The growth of the glenoid fossa is closely correlated with that of the head of the condyle of the mandible. At birth the articular surface of each condyle faces upwards, inwards, and slightly backwards. The head of the condyle attains its adult form at about 6 years of age and at about this time the articular eminence has become a well-developed ridge (*Fig. 5*). By about the time of eruption of the permanent molars the distance between the inner margins of the two condyles has reached almost to adult size.

The increase in the distance between the mandibular condyles from birth to adult life (*Fig. 6*) is correlated with the separation of

the glenoid fossæ. This is brought about by:—

a. An outward movement of the temporal bones following growth at the suture between the petrous temporal and basi-occipital bones and at the suture between the squamous temporal bone and the great wing of the sphenoid (part of the coronal suture system).

b. The outward growth of the glenoid fossa relative to the squamous temporal bone. This is the result of growth of the zygomatic portion by the surface deposition of bone which has already been mentioned.

At birth and until about 7 years of age the basi-occipital synchondrosis is level with the middle of the glenoid fossa. In the young adult the synchondrosis is level with the anterior edge of the articular eminence. This change in relative position is the result of growth at the coronal suture system, but the extent to which it occurs shows considerable variation.

It would appear that the form of the fossa is partly determined by that of the head of the condyle, that the distance between the condyles is largely secondary to growth changes at the base of the cranium, and that the development of the articular eminence is related to the pattern of movements occurring at the mandibular joint.

SUMMARY

An account is given of the development and growth of the glenoid fossa and adjacent structures from the middle of foetal life to adulthood.

THE ATTACHMENT OF EXTRACTED ANTERIOR TEETH TO ARTIFICIAL DENTURES

By J. H. FARRELL, M.D.S., L.D.S. R.C.S.

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THE fact that it is possible to attach extracted natural teeth to artificial dentures does not seem to be as widely known as it deserves, although there is nothing new in the idea. The technique is not one that can be used

very often, because of the lack of suitable teeth, but when it can be carried out the result is likely to give great satisfaction.

Before the introduction of acrylic resin, replacement of natural teeth on dentures

presented some difficulty, mainly because teeth change colour when a case is vulcanized, but the times and temperatures used in the curing of acrylic present no similar hazard. In one case where natural teeth were processed with acrylic five times, there has been no apparent change in their colour or strength over a period of four years.

The first requirement is, of course, that the extracted tooth or teeth should be of good appearance. This is often the case when teeth are lost because of periodontal disease or trauma, and it is in these circumstances that the main application of the technique is to be found. It is seldom desirable to use extracted posterior teeth as their size and occlusal form make them unsuitable for use on artificial dentures.

The preparation of the teeth should be done as soon after the extraction as possible. The root of each tooth is cut off by bur or fretsaw, and the pulp removed. The pulp chamber is then enlarged with a round bur, and a retentive form cut. There are a number of retentive forms that may be used and three that have proved themselves to be satisfactory are illustrated (*Fig. 1*); care must naturally be

taken not to cut too large a cavity or the tooth structure will be weakened unnecessarily. When the tooth has been cleaned thoroughly and all debris removed it is ready to be set up. The subsequent procedures are exactly the



Fig. 1.—Three methods of preparing teeth.

same as those for ordinary dentures except that the vulcanizer cure for acrylic resin should not be used; however, any method of polymerization in which the temperature does not exceed 100° C. will be found to be satisfactory.

I am indebted to the Photographic Department of the Newcastle upon Tyne Dental Hospital for the illustration.

CARE OF DENTURES

By JAMES PITCHFORD SMITH, B.Ch.D., L.D.S. R.C.S.

Department of Dental Mechanics and Prosthetics, The University, Sheffield

ADEQUATE instruction in the care of dentures is given to patients by the majority of dental practitioners and the necessity for scrupulous cleanliness is probably emphasized. However, it is often omitted to point out the destructive effects which may result from misguided enthusiasm on the part of the patient.

The following two cases are examples of the damage caused by a patient's zealous but misguided attempts at cleanliness:—

Case 1.—The patient complained that he was unable to eat with his dentures made three years previously.

The denture base material was resin, as were the teeth anterior and posterior. The dentures were unstable and showed little retention. In centric occlusion, firm contact between opposing teeth was made between two points only. There was severe abrasion of the occlusal,

anatomical, and polished surfaces, particularly in the upper denture, where the resin anterior and posterior teeth had been worn down flush with the level of the base material and had the appearance of yellow resin neatly "inlaid" into the pink resin base (*Fig. 1*). Similarly, the buccal surfaces of the lower posterior teeth had received close attention (*Fig. 2*).

The patient stated that as his dentures stained readily, he had cleaned them, twice a week for two years, with a domestic abrasive cleansing agent.

Case 2.—The patient attended for repair to a midline fracture of his full upper resin denture.

In centric occlusion the dentures showed an anterior open bite which was due to abrasion of the upper and lower resin anteriors (*Fig. 3*).

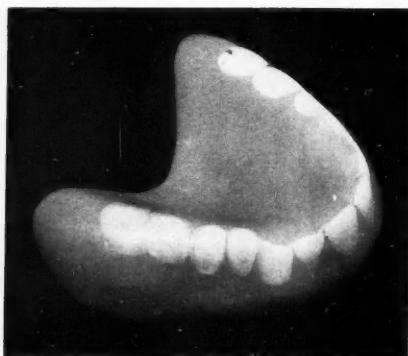
The vault of the palate of the upper denture had been thinned, leading to fracture of the denture under masticatory stress.

To remove excessive calculus and staining the patient had used a proprietary denture cleansing powder in conjunction with a stiff-bristled denture brush.

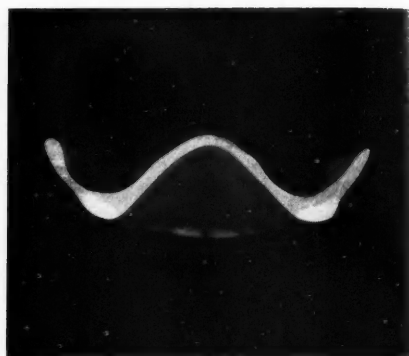
COMMENT

These cases illustrate the need for more detailed instruction of patients in the care of

staining of the dentures, may find that these measures are inadequate and resort to more drastic ones.



A



B

Fig. 1.—A, Occlusal view of upper denture showing abrasion of the teeth; B, Section of denture showing resin posterior teeth "inlaid" in base material.



Fig. 2.—Lower denture showing abrasion of the teeth.

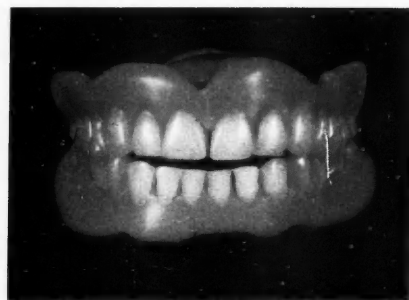


Fig. 3.—Dentures in occlusion showing anterior open bite and abrasion of anterior teeth.

their dentures. It would appear that even recognized cleansing agents can be dangerous if patients are over-enthusiastic.

It is usually suggested that soap, cold water, and a small brush be used, particularly after meals. The patient whose oral secretions and habits, such as smoking, produce severe

A patient must be warned that should regular conservative cleaning of his dentures still leave ugly stains, then he should consult his dentist.

Periodic cleansing of dentures in the dental laboratory should be an essential feature of a prosthetic service.

A Case of Ulceration and Pain of the Gingival and Oral Mucosa associated with the Presence of Silica

A case of persistent ulceration of the oral soft tissues associated with the presence of silicious particles is described and the literature of previously reported similar cases is reviewed.

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This would appear to be the first recorded case of pain being associated with the presence of such particles in the tissues. All symptoms proceeded until such time as the entire affected area was excised radically. Healing was uneventful.—MARSLAND, E. A., and FOX, E. C. (1955), *Brit. dent. J.*, 99, 115.

SPEECH DEFECTS AND MALOCCLUSION: A PALATOGRAPHIC INVESTIGATION*

By G. B. HOPKIN and J. D. McEWEN

University of Edinburgh Dental School, Orthodontic Department

PALATOGRAPHY is the recording of the contacts made by the tongue during speech with the teeth and palate. The pictorial record of a particular tongue contact is called a palatogram. It is one of the methods used by phoneticians for the study of speech sounds. There are two methods of palatography (Abercrombie, 1955)—the Direct and the Indirect; both were originated by dental surgeons, the Direct Method by Oakley Coles (1872) and the Indirect by Kingsley (1880). Both Oakley Coles and Kingsley studied the mechanics of speech production in order to be able to give speech training to their cleft-palate patients.

Oakley Coles made casts of his upper and lower jaws and from engravings of the casts had prints made. He painted his palate with a mixture of gum and flour, enunciated a letter, and recorded the contact areas, shown by removal of the gum-flour mixture, with red paint on a print. He repeated this procedure for each letter of the alphabet. His article is illustrated with twenty-six beautifully reproduced colour prints of both upper and lower arches and also shows the lip positions for each letter.

Kingsley made a plate of black vulcanite covering the hard palate. The plate was painted with a mixture of powdered chalk and alcohol, placed in the mouth and a sound uttered, the plate was removed, the contact areas or "wipe off" were delineated on a cast and a drawing made later of the cast.

Witting (1953), in a brief review of the subject, says that after some use of the direct method, the indirect method of Kingsley became of general use among phoneticians, the artificial palate being placed on a cast of the subject's mouth and photographed. The disadvantages of this method were several;

contacts made with the soft palate could not be recorded; an artificial palate had to be made for each subject; the presence of the

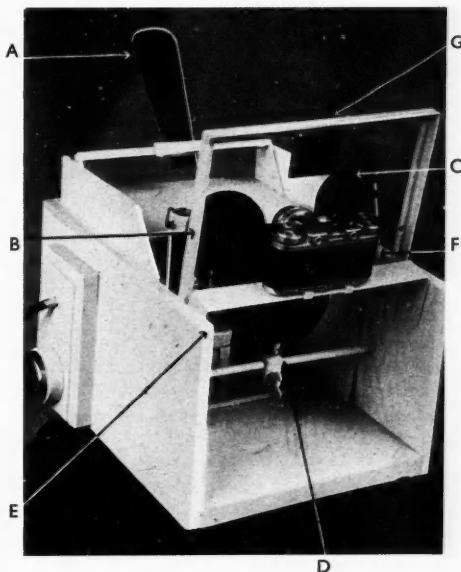


Fig. 1.—The apparatus (for description see text).

plate was liable to cause distortion of the patient's speech.

The direct method of Coles was used by Carruthers (1899, 1900); his use of the method was similar to that of Coles, but Carruthers made an improvement by using powdered charcoal instead of the gum-flour mixture.

The great advantage of the direct method was that its use entailed no interference with the subject's usual speech and a large number of subjects could be examined in a short time.

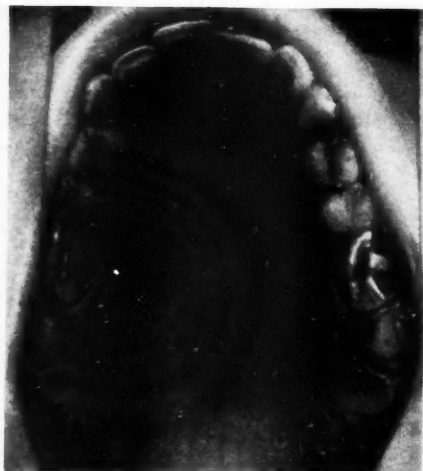
The disadvantage, which presumably was responsible for its neglect, was the difficulty of recording the contact areas. This difficulty was overcome by Anthony (1954), who

* Based on a demonstration given at the Country meeting of the British Society for the Study of Orthodontics, May 7, 1955.

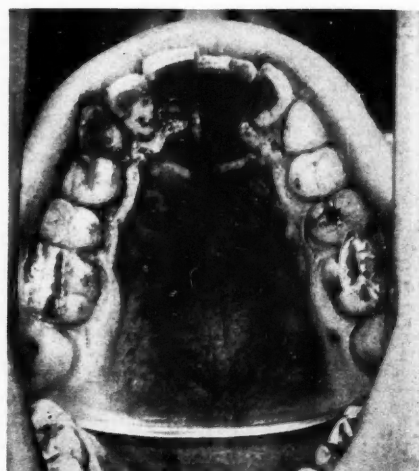
developed an apparatus by means of which a photographic record of the subject's hard and soft palates could be made simply and quickly. Witting has also reported a method of photographing the palate, but unlike Anthony's

the subject does not exhale and fog the mirror.

Anthony incorporated a compressed-air unit for spraying the palate, but we found an ordinary rubber bulb insufflator satisfactory



A



B

Fig. 2.—A, Palate after spraying; B, Sprayed palate after making s sound.

method it cannot be used single handed; he painted the tongue with a mixture of charcoal and grape sugar, charcoal being deposited on the palate at the areas of contact.

Description of Apparatus (*Fig. 1*).—The apparatus consists of an elongated plane mirror A over which the subject places his mouth. Convex mirrors B, C, and D, focus light from a 500-watt projector bulb E on the area of mirror A within the mouth. The image of the palate in the mirror A is photographed by a 35-mm. camera mounted at F. The subject can see his palate in the plane mirror G.

Method of Use.—The palate of the subject is sprayed with a mixture of powdered medicinal charcoal and chocolate powder, 3 parts of charcoal and 1 part of chocolate. The subject then utters the sound under investigation and without swallowing places his mouth over the mirror and the palatal picture is recorded with the camera (*Fig. 2 A, B*). Care must be taken to see that

and probably preferable when children are the subjects. We also found a fifty-fifty mixture satisfactory for recording and more palatable to the children.

DEVELOPMENT AND PHYSIOLOGY OF SPEECH

In order to interpret palatograms an understanding of the mechanics of speech production is necessary. In spite of the increasing stress laid upon function in orthodontics to-day, no account is given, in the standard orthodontic texts, of the part played by the masticatory and respiratory systems in speech. With the exception of a brief description by Izzard (1950) one has to turn to Kingsley (1880) or Case (1921) for any account of the mechanism of articulate speech, and we have felt it desirable to give a brief account of the development and physiology of speech.

The development of speech therapy and contact with speech therapists has quickened the interest of orthodontists in speech defects.

White, Gardiner, and Leighton (1954) refer to the value of speech therapists in correcting tongue habits; Henry (1937) suggests speech therapy as an aid in the retention of treated distocclusion cases, and there are several articles in American orthodontic literature

Physiology of Speech Sounds.—Speech sounds are normally made during expiration, the expressed column of air being vibrated by the vocal cords to produce the vowel sounds and the voiced consonants. The unvoiced consonants and the consonantal content of voiced

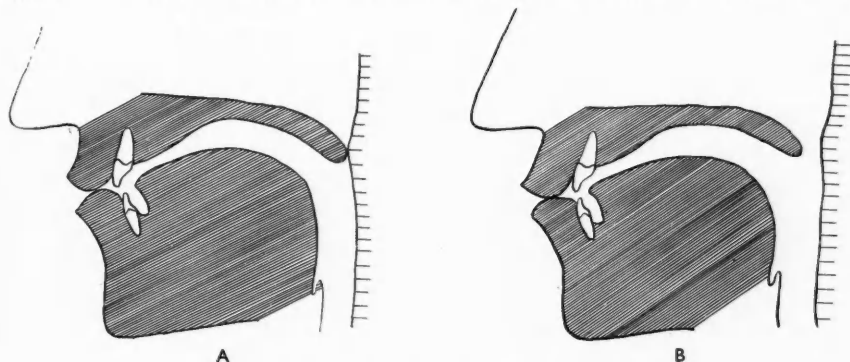


Fig. 3.—A, Lip contact in plosives *p* and *b*; B, The *m* sound (note nasal escape).

written by, or in collaboration with, speech therapists on the relationship of malocclusion to speech defects.

Development of Speech.—Whilst man may have an inborn instinct for some form of expression by which emotions can be expressed, as is shown by the different cries of a baby to express hunger, anger, or pain, man does not speak by instinct; articulate speech has to be learnt.

The learning and perfection of speech parallels the development of occlusion in the deciduous and early stages of the mixed dentition, beginning about the fifth month. While most children are "talking" by three years of age, complete mastery of all consonantal sounds is not to be expected until later, particularly the *f*, *th*, *s*, *sh*, and *zh* sounds. Both Gardner (1949) and Rathbone (1955) state that many children do not perfect the formation of these latter sounds until they are seven. The development of normal speech of course depends on the normal development and innervation of the anatomical parts involved in its production, including normal hearing, as the process of speech learning is mostly by the imitation of sounds heard.

consonants are produced by stopping or modifying the passage of the air-stream. This interference is produced by the action of the lips, teeth, tongue, or soft palate. The size

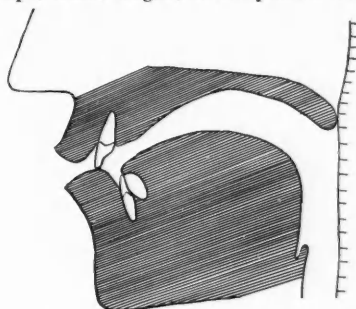


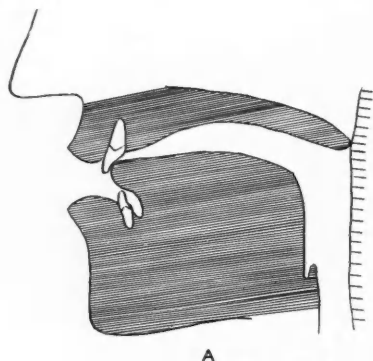
Fig. 4.—Linguodental fricatives *f* and *v*.

and shape of the mouth and nasal cavities affect the resonance and tone of the speech sound.

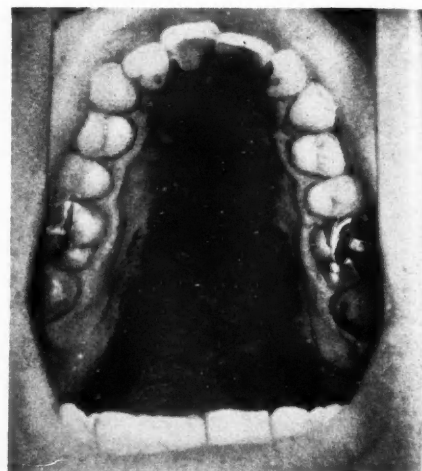
Before considering the mechanism of the production of specific speech sounds it should be emphasized that, to quote Kingsley (1880), "it is not supposable that all persons making the same sound place the active accessory organs in the same identical position . . . exactly the same resonating cavity in shape is

not likely to exist in any two jaws . . . and the changeable portions such as the tongue and soft palate adapt themselves to the circumstances and produce a resonating cavity of the same tone character".

As this study is only concerned with the relationship of speech sounds to the dental structures, vowel production is not described in detail.



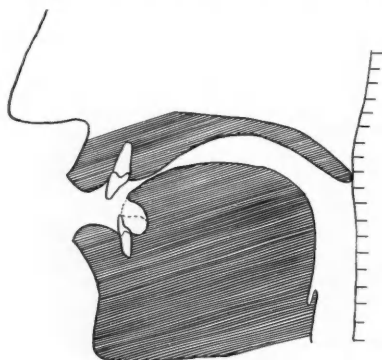
A



B

Fig. 5.—A, B, Linguodental fricatives.

The terminology used by various authors to describe speech sounds varies considerably. We have based our own on that used by Seth

Fig. 6.—Tongue positions for *s* sound.

and Guthrie (1935) and Twitmyer and Nathanson (1932).

Divisions of Speech Sounds.—*Consonants* may be Oral or Nasal, voiced or voiceless. Consonants are produced by either vibrated

or unvibrated air passing through the larynx obstructed, interrupted, and modified by the tongue, lips, teeth, and palate—*c, g, p, f, d, ng.*

Vowels are sounds which are produced by vibrated (voiced) air passing through the larynx uninterrupted by the lips, tongue, or teeth; the soft palate by contacting and sealing the pharynx with the aid of the pharyngeal musculature allows none of the vibrated air to pass into the nasal cavities—*a, e, i, o, u.*

Consonants are classified both according to the parts of the mouth employed and according to the mechanics of their production. For example, the sounds *p* or *b* are made by closing the lips together, building up air pressure behind them and then suddenly releasing the air with explosive effect. Consonants *p* or *b* are therefore classified as bilabial (location) plosives (dynamics).

The main consonantal divisions are as follows: the tongue and lip placements will be seen in the accompanying diagrams and palatograms; note that for all except the nasal consonants (*m, n, ng*) the soft palate seals off the nasopharynx and nasal cavities.

1. *Bilabial Plosives* *p, b, m*, are produced as described above (*m* is not a true plosive, having nasal escape) (Fig. 3 A, B).

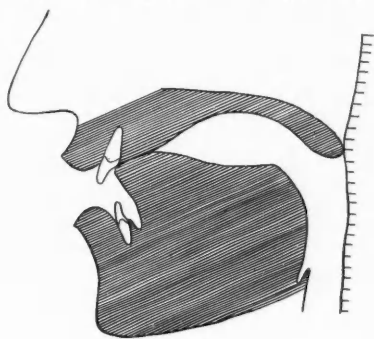
2. *Labiodental Fricatives* *f*, *v* (*v* = *f* voiced). The lower lip is placed against the incisal edge of the upper incisors and the air-stream forced out between them, the friction set up producing the sound (Fig. 4).

3. *Linguodental Fricatives* *th* sounds, voiced and voiceless. The tip of the tongue is placed against the palatal surfaces and tips of the upper incisors (Fig. 5 A, B).

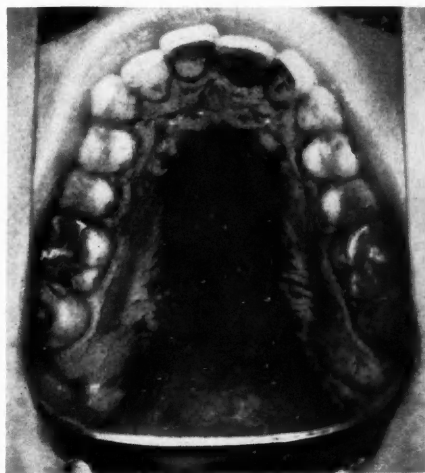
4. *Linguo-alveolar Fricatives* *s*, *z* (*z* = *s* voiced). The tip of the tongue is placed

air-stream passes out through the nose (Fig. 9 A, B).

Each sound, consonant or vowel, has its own wave form, but those of consonants such as *p*, *b*, *t*, and *d* are so short that no sensation of



A



B

Fig. 7.—A, Linguo-alveolar plosive; B, Palatal *t* sound.

behind the upper or lower incisors, the edges of the tongue contacting the lingual surfaces of the cheek teeth and the gingival area of the palate, the air being expelled through the narrow anterior channel (Figs. 2 B and 6).

5. *Linguo-alveolar Plosives* *t*, *d*, *n* (*n* has nasal escape). The tongue position is the same as for *s*, but the anterior channel is blocked (Fig. 7 A, B).

6. *Alveolar Lateral, l*. The tongue contacts the premaxillary area and the air-stream escapes over the sides of the tongue (the tip of the tongue is in the same position as for *t*, for example as in "little") (Fig. 8).

7. *Palato-alveolar Fricative* *sh*, *zh*, are produced similarly to linguo-alveolar fricatives with the tongue farther back.

8. *Velar Plosives*, *k*, *g*, *ng* (nasal voiced), *k*, and *g* sounds, are made by pressing the back of the tongue against the soft palate and quickly lowering the tongue with slight plosive effect. For *ng* the soft palate is lowered to contact the back of the tongue and the

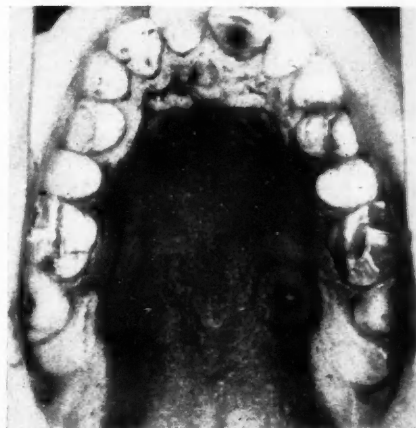


Fig. 8.—Palatograph *l* sound.

pitch is given by them, but sibilant consonants *s* and *z* may last as long as vowels or longer. It is particularly with the *s* sound that variations of frequency are noticeable.

Kimball and Muyskens (1937) point out that the static positions used to describe consonantal mechanics are but momentary positions of the muscles concerned. They stress the importance of the co-ordinated activity of the circularly and longitudinally arranged muscles of the mouth, pharynx, and larynx in producing the necessary alterations in the size and shape of the speech tube for the formation of the various speech sounds.

RELATIONSHIP OF SPEECH DEFECTS TO MALOCCLUSION

Review of Literature.—Since 80 per cent of specific speech movements are made in the anterior part of the mouth (Kimball and

high palate; and the very common defect, the defective *s* sound or sigmatism, is associated with irregular incisors and anterior open bite.

The correlation between defective speech and malocclusion is not, however, absolute; as Hellman (1917), Wray (1952), and others have pointed out, defective speech may be found with good occlusion and good speech with marked malocclusion, there being other factors such as level of intelligence, emotional

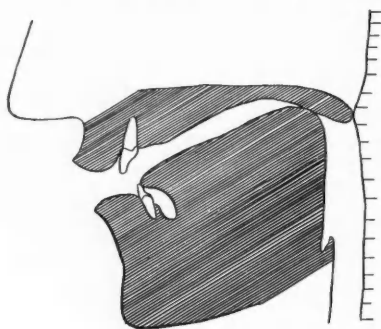


Fig. 9.—A, Velar plosives; B, Palatograph sound hard g.

Muyskens, 1937; Ramsay, 1937), it is not therefore surprising that a causal relationship between speech defects and malocclusion has long been assumed to exist. Farrer (1888) describes a case of speech improvement following correction of an incisal irregularity, and Angle (1907) refers to the ill effects of malocclusion upon speech. Articles such as those by Hellman (1917), Wepman (1937), and Kessler (1954) commonly list Angle's Class II and Class III malocclusions, narrow high palates, incisal irregularities, spaced or absent teeth and open bite, as the malocclusions chiefly associated with defective speech. The speech sounds said to be affected are the bilabial, labiodental, linguodental and linguo-alveolar consonants in the anteroposterior anomalies; the palatal consonants in cases of

state, social conditions, etc., which influence the ability of the patient to adapt the flexible parts of the organs of speech to compensate for the defects of the rigid parts. Downey (1943) contends that 90 per cent of speech disorders are functional in character and present primarily an educational problem.

Out of 180 orthodontic patients examined by Van Thal (1935) 90 per cent had errors or defects of speech in varying degree, but she considered that although bad dentition has an unfavourable influence on speech we are not justified in regarding it as the actual cause of such articulatory defects as lipping.

Bernstein (1954), in a study of 437 children with defective speech, compared the incidence of malocclusion in them with that of a control group of 446 children with normal speech.

Statistical analysis of his findings showed that speech defects were not related to malocclusion except for the condition of open bite, which showed a strong relationship with lisping, but the severity of the lisp was not related to the degree of the open bite.

Ramsay (1937), in a study using indirect palatograms, found 80 per cent of lisps had a malocclusion. Rathbone (1955), in collaboration with a speech therapist, examined casts of ten patients and tried to predict the speech defect from the malocclusion, but he found no

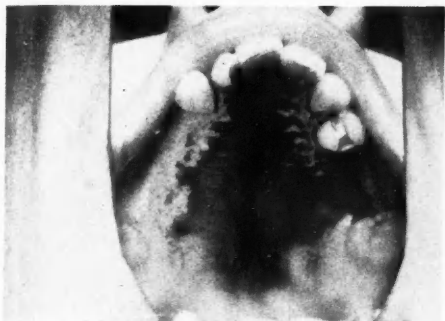


Fig. 10.—Lateral escape of air-stream during *s* sound.

direct relationship between the severity of the speech defect and the malocclusion. He refers to an unpublished thesis by Bruggeman (1934), who surveyed 477 children aged 4-8 years and found that 65 per cent of the total and 87 per cent of the defective-speech group had a malocclusion. Further findings were that spacing of the teeth and high palates were more common among defective speakers.

It will be seen that the age groups examined by Bruggeman, i.e., 4-8 years, cover mainly the period during which a child is acquiring mastery of consonant production, and as both Rathbone (1955) and Gardner (1949) state, *s* sounds, one of the most common speech defects, are mastered last. Bearing in mind also the range of variation in terms of chronological age at which a particular child reaches a specific "developmental age", one can expect to find in such a group of children a large number whose speech is still in the developmental stage.

The shedding of the deciduous incisors and the eruption of their permanent successors takes place during the latter part of this period (4-8 years), and temporary difficulties, particularly with *s* sounds, may occur at this time. Orthodontically it is a period during

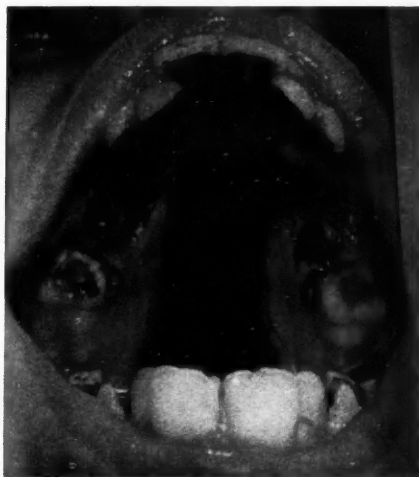


Fig. 11.—Large anterior and lateral escape of air-stream during *s* sound.

which malocclusions of a transient nature may arise which are self-correcting with further development.

Abnormal speech as a cause of malocclusion is mentioned by Strang (1950), who considers lisping to cause labioclination and infra-occlusion of the incisors. Greene (1937) also observed that in 92 per cent of all cases of lateral lisp the larger arch was on the lisping side. These cases would appear, in the light of recent work on swallowing, to be basically ones of atypical swallowing which can produce the dental irregularity described and may predispose to lisping.

In this connexion the observation by Schorr (1939) of different patterns of tongue movement in breast-fed and bottle-fed babies is interesting; he suggested a connexion between the forward thrusting of the tongue in the bottle-fed babies and the incidence of lisping. It is possible that he was observing the normal and atypical swallows, but failed to

realize it, owing to his pre-occupation with breast versus bottle feeding.

Clinical Findings.—Patients with extreme conditions of Angle Class II and Class III

jaws are responsible for causing speech defects, owing to the difficulty of effecting the usual placements of the tongue, lips, and teeth for the production of many consonantal sounds.

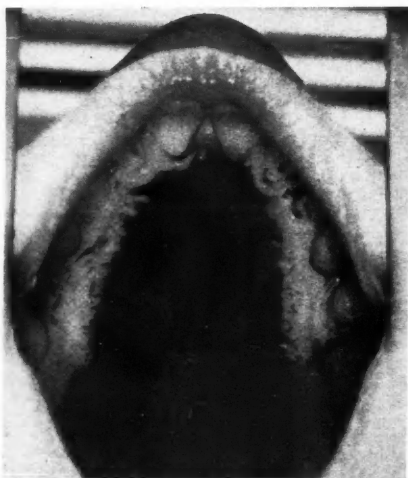


Fig. 12.—Normal *s* sound with anterior open bite.

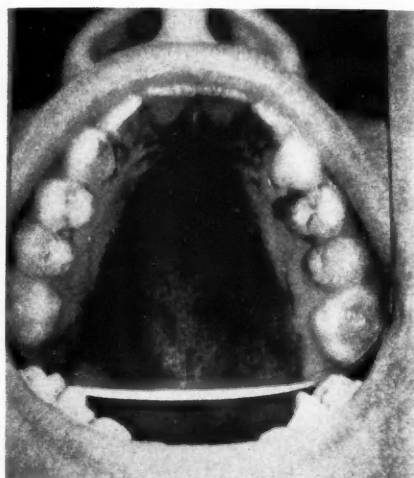


Fig. 13.—Open bite with lip.



Fig. 14.—Lateral escape *s* sound with "normal" occlusion.

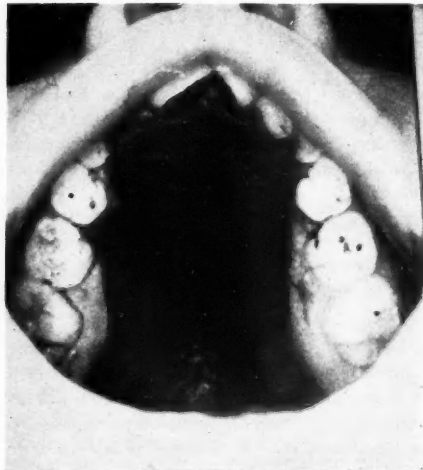


Fig. 15.—Lisp in case of excessive over bite.

malocclusions were examined, as it is in these cases that it is generally held that the antero-posterior malrelationships of the teeth and

Case 1.—This patient had an orthodontically untreatable Class III malocclusion. Greene observes that in such cases the labiodental sounds are made in reverse, the lower incisors contacting the upper lip; however, this

patient was able to retract his lower lip up over his lower incisors to make the correct contact with his upper lip and teeth for the bilabial and labiodental consonants.

The palatogram of his *s* sound (Fig. 10) shows lateral escape of the air-stream without any marked effect on the sound produced. The tip of the tongue lay on the lower incisors and the tongue was longitudinally grooved to produce the narrow channel required. When making the *t* sound the dorsum instead of the tip of the tongue contacted the upper incisors.

The speech of this patient, who was a university student, was without noticeable defect.

Case 2.—A case of Angle Class II Division I, with mandibular under-development. This patient had a lisp, the palatogram for *s* (Fig. 11) shows a large anterior and lateral escape of the air-stream. The bilabial consonants were defective, the upper lip was short and atonic, and the lower lip contacted the upper incisors as for a labiodental consonant.

Case 3.—This patient had an anterior open bite, the palatogram for *s* (Fig. 12) shows a normal channel, and there was no speech defect.

Cases 4, 5, 6.—All these patients had marked lisps. Case 4 had an open bite and the *s* palatogram (Fig. 13) shows a wide channel compared with Fig. 12.

In Case 5 the arches are well formed with normal occlusion, the *s* palatogram (Fig. 14) shows a wide lateral channel; this patient was apparently unconscious of her speech defect and did not desire speech therapy.

Case 6 had an excessive overbite, the palatogram for *s* (Fig. 15) shows an abnormally wide channel resembling the palatogram for *th* (Fig. 6 B).

It will be seen from these examples that while, on the one hand, as other observers have already noted, malocclusions can be obstacles to normal speech, and these obstacles can be overcome given intelligence and conscious effort, on the other hand good occlusion can be accompanied by defective speech.

The present study is being continued and it is hoped to publish further findings.

We wish to acknowledge our indebtedness to Mr. D. Abercrombie, Head of the Phonetics Department of Edinburgh University, for facilities for reproducing Anthony's apparatus, which was developed in his Department; and to Mr. J. P. Ladeforged, also of the Phonetics Department, for valuable advice and criticism.

We also wish to thank Mr. W. Duncan, our Instructor Technician, for constructing the apparatus and for assistance with the photography.

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The Labial Frænum

There is little indication for surgical removal of the labial frænum except in unusual circumstances, where the diagnosis is unequivocal. The conservative view is to wait for the central diastema to close itself during the eruption of the cuspids.

If the abnormal labial frænum is unmistakably evident, orthodontic closure followed by surgical excision should be attempted as early as possible.

A truly abnormal frænum seems to become more pronounced with age, whilst a simple frænum becomes less evident as the child grows older.—COMMITTEE REPORT (1955), *J. dent. Child.*, 22, 141.

DENTAL BOARD OF THE UNITED KINGDOM

*Chairman's Address at the Opening of the Sixty-ninth Session
November 9, 1955*

GENTLEMEN,

We meet once more in the shadow of impending dissolution. A Bill to amend the Dentists Acts is again before Parliament and if it survives this time we shall, as a Board, pass out of existence—peacefully I trust. It should be reassuring to those of our colleagues who for one reason or another have felt constrained to resist the passage of this Bill to read in the first Clause that the all-embracing purpose of the General Dental Council which it seeks to set up is "to promote high standards of professional education and professional conduct among dentists". Such criticism as one has heard of the measure may well have arisen because it has not always been appreciated that the Bill does not propose to place the government of the profession in the hands of some austere and remote power but provides for self-government through our own elected and appointed representatives. The functions of the proposed Council are definitely limited and precisely defined and the composition of the Council is dictated by the nature of those functions. Moreover the work of the Council will be largely carried out by statutory committees and the membership of each of these is also laid down in the Schedule to the Bill so that it is possible to ensure even more closely that the most appropriate people will be chosen to perform the various duties assigned to each committee. Education may be controlled by those directing it, discipline by those who know the pitfalls and temptations of general practice, and matters pertaining to ancillary service by those who have to train and direct the work of those engaged in it. In every case it is government of the profession by the profession for the profession, and it is difficult to see how we could have been given greater control of our destiny, having regard to the needs of the community at large as assessed by the responsible Minister of the Crown. I want to add a comment which I know will find wide approval amongst many of my colleagues and friends in dentistry. It is to say how pleased we are as a Board that this administrative independence which is to be accorded to dentistry will not cause us to sever our connexion with our friends and advisers of the General Medical Council who will continue to give the General Dental Council the benefit of their advice on all educational matters.

The Board's principal statutory functions of keeping the register and maintaining a high standard of professional conduct are duties whose efficient discharge have of course received our constant care and attention. It is, however, a source of considerable satisfaction to be able to record that to-day, towards the end, as I have supposed, of the Board's existence, the most important, if secondary, functions which we delegate to our committees are as manifold and as zealously performed as they have ever been. During the past twelve months the material produced by the Dental Health Education Committee has included a new picture-book for children and leaflets giving factual information to expectant mothers and to those seeking dental treatment. These are prepared for distribution through Local Authorities, Citizens' Advice Bureaux, hospitals, and public libraries. A new series of lectures is being composed which dentists or health visitors may use in addressing audiences of

various types; and work has now been completed on the new book *Dental Health*, intended mainly for the use of schoolmasters and mistresses. This volume which has been produced by a committee working under the able chairmanship of Professor Stones, contains a number of excellent photographs in colour to illustrate the fundamental principles of dental anatomy, pathology, and oral hygiene. We believe that this is a publication which will be most useful and it is expected to be on sale in the spring.

The recent growth in public appreciation of the importance of dental health has led to a great increase in the demand for the Board's books, posters, leaflets, films, and models. Although it has been decided that material supplied in bulk to the Local Authorities shall in future be sold at a price which is sufficient to cover its cost, the need to order, store, and handle very much larger quantities of material than hitherto does raise once again the question, which has been debated from time to time ever since the Board first undertook this work, of the extent to which the responsibility for it should be shared with other bodies no less closely concerned than are the Board to ensure that the public are properly instructed in matters of dental health. We shall have an opportunity of considering this problem afresh during the present session.

The Education Committee, too, have been very fully occupied. The services of the Postgraduate Bureau have been in demand not only from lands as distant as Australia, South Africa, India, and Malaya, but also from European countries including Cyprus, Greece, and Turkey. Correspondents have inquired about all branches of dentistry and about courses varying in length from a fortnight to a year. They have evinced an increasing interest in additional qualifications.

During the first nine months of this year, six practitioners have availed themselves of the Board's Overseas Study Grants to expand their knowledge by visits to the United States, Scandinavia, Germany, and Switzerland. In all, eighteen applications have been received under this scheme since it was started nearly two years ago and thirteen grants, varying in value from £35 to £200, have been made.

Applications for assistance with the cost of organizing postgraduate courses in the country have, however, suffered reduction from nineteen in the first nine months of last year to eight in the first nine months of 1955. This is no doubt a consequence of the organization of postgraduate refresher courses in dentistry in the universities under section forty-eight of the National Health Service Act of 1946—a wholly satisfactory development in which we have been able to play some small part. A recent addition to our library of scientific films brings the number of films available to forty-six.

Finally, Professor J. C. Brash has completed a thorough revision of his classic lectures on the "Aetiology of Irregularity and Malocclusion of the Teeth", first published in 1929, and to them Dr. James Scott has added a substantial section in which he surveys developments which have taken place in this field during the past twenty-five years. We have been unable for some time to satisfy the continuing demand for this standard

work and you will be pleased to hear that the new edition will be available early next year.

The main preoccupation of the Education Committee during the past twelve months has, however, been with matters affecting entry into the profession. I recalled last May that the circumstances in which the Board were set up clearly indicated that we should be expected to assume a special responsibility towards maintaining the number and quality of new entrants, and I spoke of the special committee which we had set up to consider what steps we should take to meet the increased public demand for dental treatment and deal with the problem presented by the high average age of the profession. Acting upon the report of that Committee, the Board have already put in hand a number of projects designed to encourage and assist young people to make their career in dentistry and perhaps I may briefly refer to some of them.

First there are certain minor measures. The Committee had been impressed by evidence that organized visits of parties of senior pupils from schools to dental teaching hospitals awakened considerable interest in dentistry not only among the visitors themselves but also amongst their school-fellows in the schools from which they came, and had directly led to applications for places in the dental schools. The Board have therefore done what they can to encourage both the authorities of the dental schools and head- and careers-masters and mistresses to arrange such visits.

The Board have also increased to £240 the amount which they are prepared to lend to any approved student of dentistry whose studies would otherwise be interrupted in consequence of some unexpected financial reverse at any time within the last two years of his course. They have also announced that in exceptional cases they would consider making outright grants to students whose training was imperilled by a similar change in their circumstances at an earlier stage in their career.

Further and more direct action has been taken by the Board to stimulate recruitment to the profession by the creation of "Dental Board Scholarships" for award, after interview, to applicants who have obtained passes at the advanced level in physics, chemistry, and biology (or botany and zoology) in the examinations for the recognized certificates in general education and who are eligible to enter a dental school. These scholarships are awarded without regard to the financial resources of the candidates' parents. Their nominal value is £200 a year for the length of the dental course, up to a maximum of five years, and this is the amount which will be awarded in every case in which the Scholar can benefit from it. It may, however, prove more valuable to the recipient in the long run if a lesser amount is given to a scholar who receives from some other body a grant which would be liable to reduction if the full amount were to be paid. This scheme is in its infancy. Already experience has shown that the conditions we have laid down do not in practice give an equal opportunity to candidates for all the dental schools. It may be, also, that they are too narrowly vocational. In the course of this session we shall be asked to consider their amendment. Nevertheless, and in spite of the fact that it was not possible to announce the terms of the scholarships until July, seventy-eight applications were received in this first year and the Board have been able to award scholarships to fourteen candidates from all parts of England and from Scotland. Moreover, those of us who interviewed the candidates were agreeably impressed with their very high average level not only of academic achievement but

also of general suitability to become members of the dental profession.

Before leaving the subject of scholarships, I would like to say that the Sub-committee who were charged with the responsibility for preparing a scheme for awarding scholarships received evidence from university and school authorities and others concerned with education in support of the contention, since brought out in the "Early Leaving" report of the Ministry of Education, that the age at which most young people are being lost to the professions is about sixteen, when many promising boys and girls leave school to take up paid employment. Something has since been done on a national scale to reduce this loss, but our Sub-committee remain of the opinion that one of the most effective ways of improving recruitment to the dental profession would be to introduce a system of grants to enable children to remain at school and study the basic science subjects, without any obligation to study dentistry but with an undertaking to give the idea serious consideration. The introduction of a scheme of this kind would not, of course, come within the scope of action open to this Board.

Finally, the survey of opinion which was made early this year on behalf of the Board among boys and girls at school, parents, teachers, dentists, and students of dentistry, medicine, and kindred subjects reinforced our belief that a principal factor in limiting the number of suitable candidates for a career in dentistry was widespread lack of knowledge of the scope and content of the curriculum and the extent of professional activities. The Board are accordingly taking steps to ensure that information about the nature of a career in dentistry and the opportunities which such a career offers to an active and intelligent boy or girl is made readily available to young people who are looking forward to a career in the professions, and to those whose business it is to advise such youngsters. We have printed and published an illustrated booklet which we believe gives an accurate and stimulating picture of what dentistry is really like. This booklet is now being distributed free to all schools at which boys and girls remain after attaining the age of sixteen, to Local Education Authorities, dental schools, the education branches of the three fighting Services, and the Government departments concerned, including the Youth Employment Service of the Ministry of Labour. A copy will also be sent to every dentist in the register since they may receive inquiries from their young patients and might properly expect to be fully informed of the Board's action in this matter. Finally, we are making available information in the form of speakers' notes for those who intend to give talks in schools or to parent-teacher associations on the subject of dentistry as a career, and we hope to enlist the co-operation of members of the profession who have had experience of public speaking in visiting schools to give talks on this subject.

I referred just now to the survey into the factors affecting recruitment which has been carried out for us, and I am sure that you would wish me to express the Board's appreciation of the courtesy extended to the interviewing team and the time and attention devoted to replying to both spoken and written questions by dentists, students, and busy members of other professions and occupations. Without their generous co-operation an effective survey would, of course, have been impossible. As it is, the survey has been most valuable and the Board have included the report in their evidence to the Inter-departmental Committee on Recruitment to the Dental Profession appointed by the Minister of Health.

The special committee which we set up in May to prepare the evidence to be submitted on behalf of the Board to the Inter-departmental Committee have completed their work and the evidence, having been approved in draft by the members of the Board, has now been sent forward. We shall shortly be required to appoint one or two of our number to attend before the Committee to amplify that evidence by word of mouth. It has been my great pleasure to extend to the Committee's distinguished Chairman, Lord McNair, the Board's congratulations on the conferment of a barony upon him by Her Majesty in the Birthday Honours List. I think you would like to hear the reply I received from Lord McNair. He writes: "I should be glad if you would convey to the Dental Board of the United Kingdom my appreciation of their kindness in sending me, through you, their congratulations. It is not impossible that some day I may get the opportunity of saying a few helpful words in the House of Lords regarding the dental profession. The public needs education upon the vital importance of the profession to the country."

As I said at the beginning of my address the Dentists Bill is again before Parliament. I should be bold indeed if I ventured to predict the date of enactment of a measure which has been awaited for a decade and whose introduction and career have been interrupted by three changes of Minister, a change of Government, a

prorogation of Parliament and, more recently, by the introduction of the first autumn budget for eight years. Nevertheless, we must be prepared for the Bill to become law during the present session and, as two years ago, make all necessary preparations for the transfer of our functions, our assets and our liabilities to our successors. Apart from such provisions as are contained in the Bill itself and do not require any action on our part, this is largely a question of accounting, to which our Finance Committee have given careful attention. We shall shortly be asked to consider and approve their report and recommendations. Under the Bill, the Board have also one specific task, to make rules for the election of members to the new General Dental Council. We have already given provisional approval to draft rules for this purpose and it is not proposed that these should come before us again until the rules fall to be made. We should, however, be failing in our duty if we did not prepare a draft of numerous other Regulations and rules required under the Bill for the consideration of our successors, so that they may enter upon their functions as expeditiously as possible.

Our immediate task, however, is to hear a number of disciplinary cases and, in addition, our Committees who have been very actively engaged for the past two days have matters of great importance to bring before us to which we must give our careful attention.

PARLIAMENTARY NEWS

House of Commons

DENTISTS BILL

MR. IAIN MACLEOD (Minister of Health), moving the second reading of the Dentists Bill, said it had four main provisions:

"The formation of the General Dental Council and its composition; simplified procedure for the admission of foreign dentists to the lists; the question of restrictions on those practising the business of dentistry and the exemptions contained in the Bill; the more controversial matter of ancillaries."

Despite the controversy around the last point, by far the most important part of the Bill was the granting of self-government to the dental profession.

The new General Dental Council to be established would consist of 35 members, of whom 31 would be registered dentists, 19 of whom would be put forward by the licensing dental authorities and 16 members would be either elected or nominated.

With regard to the admission of foreign dentists to the lists, this applied to only about 50 or 60 people, who, if their diplomas could not be sufficiently checked, would under the new procedure be able to be registered following some test or examination by the General Dental Council.

Controversy had centred around the clauses relating to ancillaries. We must be absolutely clear about the background to the proposals. "The ratio of dentists to the population is one to 3400 men, women, and children. Although the numbers of those engaged in the priority services has been climbing steadily—to about 1000—it is not more than fifty per cent and perhaps not more than one-third of the number of dentists that we need to give a thoroughly efficient service in this field. Thirdly, there is the problem—and this is the crux of the whole

matter—of recruitment. The Teviot Committee recommended that we should try as quickly as we could to get a yearly intake of 900 into the dental schools. I have to tell the House not only that we have not got anywhere near that but in my view I can see no chance in present circumstances of getting within range of that figure."

"The records would seem to indicate that we would be lucky if we could hold it at anything more than half of the 900 which the Teviot Committee suggested. We have been up to 654 in 1947-8 and we have been down to 478 in 1954-5." Two proposals were in the Bill regarding ancillary workers. The first suggested oral hygienists who would work under the strict control, in private practice, of registered dentists. The second proposal stemmed from the 1950 Report of the U.K. Mission which was sent to New Zealand and reported that the New Zealand school dental nurse system had resulted in a high standing of technical efficiency for the treatment of children.

Mr. Macleod asked the House to agree to have an experiment on these lines.

It seemed clear that the experiment in New Zealand had been worth while. We ought to see if we could learn from it in this country.

The proposal was that for a limited list of school children the dental ancillary workers would be able to extract milk teeth, and to carry out fillings.

The work would be done under the direction of a registered dentist and the regulations would be made by the General Dental Council.

There was no intention of bringing within the scope of the ancillary workers provisions to dental technicians.

Another change was to have a committee to look after the experiment.

"The Government regard this as a worthwhile experiment and have no intention of pre-judging its success or failure. We have been very careful indeed to put the strictest controls we can think of upon the regulations that are to be made for these clauses. I think the public interest will be fully safeguarded."

He was ready to be receptive to suggestions in committee.

He welcomed the attitude that the British Dental Association had been taking towards the new Bill. They remained opposed to the introduction of ancillaries.

Dr. E. Summerskill (Lab., Warrington) said they were debating a new form of preventive medicine. What the Minister described as an experiment would be a new form of dental health service which would transform the health services enjoyed by the children.

The most important part of the Bill was the new experiment.

They would not be doing their duty unless they considered the objections of the dental profession.

One should have a large proportion of men on the Council who understood the difficulties of the general practitioner.

Dr. Summerskill urged that the composition of the General Dental Council should more nearly represent the composition of the dental profession.

"Had the Minister", she asked, "considered abolishing the annual retention fee of two guineas?"

Referring to the ancillaries, she said—"The view has been expressed by the British Dental Association that they are not prepared to accept these new dental ancillaries who will be used in the experiment which the Minister has mentioned—filling children's teeth and extracting milk or deciduous teeth.

"The dentists fear the dilution of the profession and the general lowering of standards. Now that is understandable and we must examine it fairly and squarely. We owe that to the dentists."

She said one of the objections raised to the new ancillaries by a deputation from the British Dental Association was that the ancillaries were to be permitted to fill and extract deciduous teeth without full dental training.

"It is proposed to get girls—if we follow the New Zealand example—highly intelligent girls, girls with the right manner, specially-picked girls who will be given a careful and thorough training in that particular mechanical work. Furthermore, and I do not think this has happened in New Zealand, they will be supervised by fully-qualified dentists.

"The dentists say this is an encroachment upon their preserves.

"I cannot help remembering that before 1918, before the introduction of Maternity and Child Welfare Clinics, the medical profession objected to this encroachment upon their preserves.

"But that experiment was in the interests of the children of Britain; just as this change would also be."

Mr. S. G. Howard (C., Cambridgeshire) hoped nothing would be done by way of amendment to the measure which would cut down representation of bodies carrying on professional education.

Mr. Frank Beswick (Lab., Uxbridge) said that as the Bill was worded only 4 of the 35 members of the proposed General Dental Council would not be dentists. As the general tendency in these matters was to give greater opportunity for expression of opinion by the patient he thought that figure was rather small.

The Minister had not referred to proposals in the Bill for further restrictions on bodies corporate. "He has come down very severely on bodies corporate and not attempted by one word to justify those restrictions.

"Surely some evidence is required from the Minister to justify this action? Parliament is being asked to pass restrictive legislation."

Mr. Macleod intervened to say: "As I understand it, I am sure this is the position, if he looks at clause 24 which makes some of these restrictions, this will not apply to the Co-operative Dental Association because they are already there. So far as I know this particular clause was amended to meet some points of theirs including the matter of appeal.

"The Co-operative Dental Association is not hampered in any way by the restriction on new dental companies", he added.

Mr. Beswick: "The proposal to prohibit in the future any corporate body entering into practice does not apply to those already in operation, that is perfectly true. But in any case it is not simply the Co-operative Dental Association. It may be in the future two or three dentists getting together may prefer to practise under some co-partnership scheme."

Mr. Beswick went on to instance some organization employing 60 to 70 professional men. He said that under the Bill if one was found guilty of embezzlement in the future and if he was a director, then not only would he be punished in the criminal courts, but also the organization would be closed down. "The Bill gives power to close down this body corporate. This kind of group punishment is not carried out in this country in any other respect. I would have thought it rather unfair in this particular profession."

He thought the Minister had discriminated very harshly against bodies corporate.

Sir Hugh Linstead (C., Putney) said he welcomed the Bill and the approach of the Minister in treating very carefully the opinions of the dental profession about it. "I am sure it is essential that the profession be carried with the Ministry in legislation of this kind. Of all professions in the National Health Service I should think the dental profession is the least happy at the present time. They seem to have had a series of misunderstandings with the Ministry and the result has been that they are disgruntled and not happy in their professional work. Anything that can be done to make certain that this Bill is put in a form which carries the bulk of the dental profession with the Minister is I am sure a good thing." The major problem behind this legislation was that of manpower. "The Bill attempts to provide some alleviation of the present difficulties but I am bound to say I do not think it will provide enough manpower to come anywhere near to meeting the needs of the country."

Mr. J. Hynd (Lab., Attercliffe) said the Bill raised the status of the dental profession and might affect recruitment. The Bill sought to deal with foreign dentists.

They were not losing the vast experience that the General Medical Council had had in regard to the dental profession because there would be six members of the Medical Council on the new Dental Council.

Referring to refugee dentists he said it was high time the unnecessary and unhappy situation was put right.

Mr. J. K. Vaughan-Morgan (C., Reigate) welcomed the Bill. "It seems to me this is a chance to really survey this problem and, ultimately, there may be found

in this experiment a solution of some of the difficulties that beset dentistry as a whole at the present time."

Mr. Vaughan-Morgan complained, however, that there was nothing in the Bill to protect the use of the title "Dentist".

Mr. A. E. Oram (Lab., East Ham S.) said he understood there had been undesirable practices on the part of corporate bodies in the dentistry profession, but it seemed the wrong way of dealing with them by prohibiting such bodies altogether.

He added that he would like to see an extension of co-operative partnerships in dentistry.

Air Cdr. A. V. Harvey (C., Macclesfield) said: "I am not satisfied the Bill itself is going to add materially to the dental services in the immediate years ahead. And young men are not going into the profession in increasing numbers."

Tens of thousands of children in the country still had not had their teeth examined and of the present 15,000 dentists it was estimated 5085 were due to retire by 1958. If this situation continued it might cause the service to break down.

In the first five years of the health service, dentures had cost £100,000,000 and he wondered whether people had received value for money. It had been estimated one in six of the population would shortly need full upper and lower dentures.

Mr. R. Ledger (Lab., Romford) said that the average age of practising dentists was about fifty-five. One-third of the number of dentists practising at the moment might retire by 1958 and their numbers could not be made up by the entrants into schools and other means of recruitment. "That does underline the seriousness of the situation we may face in three years' time."

Mr. C. N. Thornton-Kemsley (N.L.C., N. Angus and Mearns) said: "I do not think it would be right if the House and country were to get the impression that we are dealing with anything but a dissatisfied profession."

There was no doubt that throughout the profession there was a sense of injustice and uncertainty. The profession had suffered from a bad Press. "If the ordinary dentist worked reasonably hard he was criticized very often for refusing to meet cases of need. If on the other hand he worked like a slave and made a large income he was all too often castigated for being a profiteer. Certain sections of the Press spotlighted the misdemeanours of a few without recognizing the very fine job which was done by the great majority of the dentists in trying to cope with an impossible situation. That bad press has had an unfortunate effect on the profession."

Mr. Thornton-Kemsley said they were wrong to prejudge the findings of the McNair Committee. It was unwise to introduce something which would forgo the co-operation of the profession.

Dealing with objections to the suggested dilution he said there was anxiety that the patient might suffer. Hitherto we had imposed higher and higher standards upon entrants to major professions. Now, for the first time, we were going to reverse that process.

It was not necessary to have 19 representatives of the universities out of 35 on the proposed General Dental Council.

The important question was recruitment. Dentists were not putting their sons to the profession. We had to double the present rate of recruitment.

They should restore confidence in the future. He suggested deferring talks about dilution until they knew what the McNair Committee was going to advise.

The representation of practising dentists on the General Dental Council should be increased.

Doctor S. Hastings (Lab., Barking) urged the Minister not to depend too much on dentists who, generally, speaking, were opposed to this scheme.

"It is like appointing a committee of butchers to determine the desirability of vegetarianism," he said, amid laughter.

Mr. R. G. Page (C., Crosby) while welcoming the Bill, said he was worried about the proposals for ancillary workers. Rather than spend over £100,000 to train 80 half-dentists in four years, would it not be better to use that money—and even less would be needed—to help 80 dental students to become fully qualified in that period? That was the line, he suggested, the experiment should take.

Mr. Charles Royle (Lab., Salford W.) said the technicians of the dental profession were being neglected and were not getting the opportunities they deserved.

Mr. S. Storey (C., Stretford) agreed with the Minister that the overriding condition regarding the General Council was that members should not sit as representatives of particular interests but should consider themselves as representing the whole profession.

Captain J. Baird (Lab., Wolverhampton, NE.), the only practising dentist to take part in the debate, said it was not so long since the dental profession really received a decent status and the setting up of a General Dental Council was the next logical step. It would allow them to speak with more authority to the medical profession. "I am certain there is a way whereby we can increase the number of general practitioners on the Council." The question of widows and lay people was a difficult problem. A dental surgeon's right to sell his practice was one of his ways of saving. He was all in favour of setting a time limit for a widow to sell the practice, but suggested that five years was a much better period than three.

In cases of special hardship a widow or trustee should have the right to appeal to the General Dental Council for an extension of time. The most controversial issue was that of the dilution of the profession, the introduction of ancillaries. The Minister, he recalled, was cautious what he said and he wanted to be cautious also. "We on this side welcome the Bill. We welcome this experiment and if as a result of the experiment something can be done to make a contribution to this terrible problem of the shortage of dentists we will all be very happy indeed. To my friends in the dental profession I would say that while they are grumbling about this, they must remember in the present Bill there are many more safeguards for the dental profession than there were in the Bill of 1952. And we must thank the Minister for them."

At the same time, as a practising dentist, he should warn the House about the dangers there could be in too much dilution. The experiment would not solve the problem of dental manpower. "It will be a minor contribution to the problem but only a minor contribution."

Mr. Baird said there was no way by which you could judge a dental technician. It would be wrong to allow a technician to work in the mouth until we had some way of judging his ability and merit.

There were other ways of tackling the question of shortage before rushing into the dangerous position of general dilution.

He claimed that the dental profession was interesting and varied. The day after a young man qualified he

could find a job anywhere at £25 a week. It was a congenial job and well paid, and he recommended young men to go into the profession.

He suggested a national scheme whereby we could give adequate grants to young men and women to go into the profession. Women made good dental surgeons. If we offered appropriate financial inducements we could get the recruits.

By streamlining the course without reducing standards we could cut the amount of time to train a dentist by six months at least.

"I warn the House there are dangers in going too far along this road. I hope we will think twice before we go any further along the road of reducing standards. Let the aim be to try and raise the standards rather than bring them down."

Miss Patricia Hornsby-Smith (Parliamentary Secretary, Ministry of Health) replying to the debate referred to the composition of the Council and said they would look at the matter in committee.

Miss Hornsby-Smith added: "All members of the House have said and accepted that we have a very grave shortage of dentists, indeed. And there is no doubt—unhappy though it is to have to make the statement—that, however successful our efforts in recruiting dentists may be, and however successful the McNair Committee may be in its recommendations, it is beyond the bounds of practical possibility that we should be able to double the present number of dentists within a reasonable period of time. That is the problem which faces the House to-day."

Referring to the pay of dentists she commented—"I do not think that it is just to suggest that this is such an abominably-paid profession."

"I do not think it is unfair to say that, perhaps, a minority of dentists have been so busy crying 'Wolf' about their own profession—and there have been the grossest misrepresentations in certain of the National newspapers about the remuneration which dentists now enjoy—that I think it quite possible that they have scared off many recruits to that profession by putting out what are completely false figures of the average remuneration which can be made by a live, agile, and active dentist in his profession."

There was "the further unhappy point" that there was a higher level of failures in examinations for the dental profession than in most others.

While they deplored the shortage of dentists they had to realize that, though there were 650 places available in dental schools at present, there were only 478 applications received in the year 1954-5.

She said the Teviot Committee had earlier suggested we would need 20,000 dentists.

"To-day, to give the full service we would wish to give, we would require more than 20,000 now. We have, at the moment, 12,000 dentists in active practice in this country. With the best will in the world we are unlikely to be able to double that number in any foreseeable span of years."

She said dental treatment for the under-21s had risen from 28 per cent of total treatments in 1950 to 51 per cent in the first six months of this year. Whereas there were 1,200,000 treatments in 1950, the figure for last year for this group was 2,900,000.

The demand for children's treatment was growing faster than it could be met. Two facts which might well shock members showed the need for the experiment with ancillaries.

"On current evidence every child on average entering school at five, has five teeth missing, decayed or filled."

"Although dental treatment for the under-21s is free, this reflects sadly on the dental consciousness of parents."

"The second fact is that roughly two-thirds of all children up to the age of 14 in any one year do not go near a dentist. That is the size of our problem."

"I ask members to recognize it is in the face of these facts we feel it is necessary to carry out this experiment."

Dealing with members' fears that the experiment might cause dilution of standards, she said: "I do not believe the introduction of dental ancillaries will dilute in any way or lower the status of the dentist."

The Bill was read a second time without a division.

On the advice of both the Minister of Health (Mr. Iain Macleod) and Captain J. Baird, M.P., a practising dentist, the House of Commons Standing Committee on the Dentists Bill rejected proposals affecting the work of ancillary dental workers, which, according to the Minister, went "much too far".

The amendment on which the Committee divided, at its first meeting on Tuesday, Nov. 15, was defeated by 25 votes to 4.

The proposals put forward by Mr. R. Ledger (Lab., Romford) were summarized by the Minister thus: "First of all they remove the prohibition which I have inserted into the Bill of 1952. Secondly, they require the General Dental Council to establish a class of dental prosthetists for an experimental period of three years and to arrange for an experimental scheme of training in the same way as is to be done for people of the New Zealand type."

"Thirdly, and this is a point which must be noted very carefully, they propose to except this class from the safeguards which are to apply to other types of auxiliary, such as the requirement that they shall work under the direction of a registered dentist in clinics, hospitals, and health services, and in private practice under the direct personal supervision of a dentist. Those requirements, under these amendments, are not to apply to the class of dental prosthetists. They also provide that a special part of the register must be set aside for the dental prosthetists, and provision is made for them to be represented directly on the General Dental Council, as well as for them to have a Dental Prosthetists' Committee of their own."

Mr. Macleod declared: "Quite frankly, in my opinion these provisions go much too far. I am quite confident they would not be acceptable to this committee, or indeed to the dental profession as a whole."

The principle on which the Bill was based was that, whatever the position might be at some future date, for the moment there was not sufficient justification even to contemplate the establishment of a class of dental prosthetists who would have direct access to the patient. The reasons for this were firstly the admittedly very mixed calibre of the present dental technicians from whom recruits would have to come and, secondly, the known wishes of the trade unions which were recognized as representing these people.

If provisions as suggested were put into the Bill, they would forfeit all hope of carrying with them the dental profession.

Mr. Ledger had said: "If we are concerned to fill the gap in the number of dentists required to satisfy the demand for dental treatment we shall have to tackle the problem rather more realistically than by merely bringing in these

few ancillaries envisaged by the Bill, whom the dentists do not appear to want in any case."

Referring to an organization of dental prosthetists, he said: "They work closely with dental surgeons. In many cases at this time they take measurements in the surgery. I had a copy of a letter from one of those ancillaries who carried on that work while the dentist with whom he was working was in hospital. He did it most successfully to his advantage and the advantage of the dentist."

Mr. Macleod: "If that is so, the dental technician was breaking the law, and the dentist was conniving at that breach."

Mr. Ledger: "Yes, there was a number of cases within a certain time in which action was taken." This sort of thing had been going on.

Sir Hugh Linstead (C., Putney) said he had considerable sympathy with those who spoke on behalf of the dental mechanics, but he did not think the Bill was the means by which such a very substantial proposal should be carried into effect.

Mr. Baird said it would be wrong to introduce a proposal of this kind before discussing it with the interested parties. "The aim of the dental mechanics themselves is not to broaden their field of practice and become assistants to dentists—perhaps exploited by dentists—but to improve their position as dental mechanics, and in the long run to obtain a system of registration. They would like to see a Dental Mechanics Bill to give them better status but until there is a uniform system of education and a standard whereby to judge dental mechanics and their technical ability, the Committee should have no thought of allowing them to practise on the general public."

REGISTRATION FEE

Dr. Edith Summerskill (Lab., Warrington) drew attention to the subject of the registration fee, and pointed out there was a distinction between the medical and dental professions. "I think that one's name should be allowed to be entered on a register without payment of an annual registration fee", she added.

Miss Patricia Hornsby-Smith (Parliamentary Secretary, Ministry of Health) said: "The fees will be raised for the purposes of the General Dental Council. It has been computed that a sum of £70 would be required as an initial all-time registration fee to provide an income to balance the £2 2s. a year which is now paid yearly by the registered dentist." This was a matter to be sorted out by the profession.

Mr. Baird said: "I do not understand why doctors should be able to be on their register without any fee, whereas the poor dentists are to be charged."

Miss Hornsby-Smith: "Doctors pay £5 initially, and the payment of this registration fee by the much larger number of doctors apparently provides the necessary income. If Mr. Baird feels that £70 or £2 2s. a year is too high, he will be perfectly free to take up the matter with the General Dental Council."

After further discussion, in which Air Commodore A. V. Harvey (C., Macclesfield) said he felt the matter should be settled by the Committee, Mr. Macleod said he was very ready, if the Committee so desired, to consider the matter again. The G.M.C. had other sources of income, he said. He was willing to consider the matter with the Dental Board and make a statement later. (T. Nov. 15.)

When the standing committee considering the Dentists Bill resumed on Thursday, Nov. 17, Sir Hugh Linstead 138

(C., Putney) moved an amendment which he said had been put down at the request of the British Dental Association.

Its purpose was so to alter the wording of the Bill that the General Dental Council, when established, would not be "required" by the Privy Council to initiate the scheme for ancillary workers. There were two points in favour of this, he argued.

"First, by leaving the initiative with the General Dental Council, you place the undivided responsibility for the scheme on the dentists.

"Secondly, if you make a profession master in its own house, you do not straight away 'require' that profession to do something."

Dr. Edith Summerskill (Lab., Warrington) opposed the amendment.

She added: "To leave it to the people who object to the scheme to decide when the scheme ought to come into operation is to make nonsense of the Bill—it is to invite the dentists to drag their feet."

Mr. Iain Macleod (Minister of Health), replying, said: "There will be sympathy with what Sir Hugh has said and I would like to see the experiment initiated by the dentists. Provided we can get a time limit, we might consider it. I want him to withdraw the amendment, so we can reconsider it and put a time limit in."

The amendment was withdrawn.

During a discussion that Clause 20 stand part of the Bill, Capt. J. Baird (Lab., Wolverhampton N.E.) said it was not clear who was to pay for this experiment. There were fears the General Dental Council would have to pay the whole of the cost.

Mr. Macleod replied: "The intention is the Exchequer shall pay the whole cost of the experiment, except for the ordinary administrative headquarters expenses of the General Dental Council."

The clause was added to the Bill.

Mr. Frank Beswick (Lab., Uxbridge) moved an amendment which he said was designed to ease the total ban which the Bill was placing on the formation of corporate bodies in dentistry in future. He said: "I do not think we should have this complete blanket restriction on corporate bodies. Some of them can serve a very useful purpose." He suggested the provisions in the Bill would stop the development of co-partnership in dentistry—an object desired by all parties.

Sir Hugh Linstead opposed the amendment. He said the Bill would only affect limited companies. Partnerships could still be effected.

Mr. A. E. Oram (Lab., East Ham S.) said the non-profit-making corporate bodies in dentistry performed a very useful function. In any case the Bill did nothing to weed out the undesirable bodies if they happened to have been established before July 21, 1955.

Capt. Baird said: "Corporate bodies generally are an unnatural development in dentistry. But the Co-operative Dental Association, which is doing a good job, came into being because of the evils of private dentistry before the war. I believe that most of the other companies have been exploiting both the public and the dentists they employ." He hoped the amendment would be rejected.

Mr. Macleod, replying, said the case against corporate bodies was overwhelming. "At present there are 78 dental companies on the list kept by the Dental Board. Of these, 62 have been incorporated since the National Health Service Act, and 10 during the current year; 36 of these companies have an unregistered person as a director."

He agreed that the Co-operative Dental Association was an exception and did very good work and the percentage of complaints during the years 1952 to 1954 was 5, the same as for private practitioners. But for employees of dental companies, the percentage was 19. As for disciplinary action taken during that period, the figure was 2 per cent for the Co-operative, 2½ per cent for the dentists, and 7 per cent for employees of dental companies.

There had been gross abuse in this field and he said he could "revolt" the committee if he read details of cases in his files. The good companies had nothing to fear from the Bill—it was right the bad companies should fear it.

Mr. Beswick pressed his amendment, which was lost by 23 votes to 8.

When the committee adjourned, all the 36 clauses of the Bill had been considered. Two schedules to the Bill have yet to be discussed. (*Th. Nov. 17.*)

At the committee's third and final sitting on Nov. 22, Mr. Iain Macleod (Minister of Health) announced that at a later stage of the Dentists Bill he would propose to increase by two the number of elected dentists on the General Dental Council.

Rejecting the suggestion of Dr. Edith Summerskill (Lab., Warrington) that there should be an increase of five, he said: "I am prepared to make amendments to the Bill to increase the number of dentists that will be elected, but to add five would go substantially too far in altering the balance that has been very carefully provided for. My suggestion is that at the appropriate stage of the Bill I should make the number of elected dentists eleven instead of nine.

"Counting in the university", he continued, "and all the other representatives provided for in the Schedule, of the 35 members of the Council, England and Wales will have 20, Scotland 9, and Ireland 6. These proportions are clearly favourable to Scotland and Ireland. I do not think there would be any reasonable complaint if both those two were added to the representation for England."

Capt. Baird (Lab., Wolverhampton NE.) thanked the Minister for his concession, but the Opposition felt,

he said, that he had not been over generous in the matter.

Dealing with an amendment moved by Mr. J. K. Vaughan-Morgan (C., Reigate), the object of which was to give a majority among the dentists on the Disciplinary Committee to elected dentists, Mr. Macleod proposed the figure of four compared with Mr. Vaughan-Morgan's suggested five.

Mr. Macleod said: "It would mean that of the ten (Council) members, ignoring the President, at least four would be elected members and at least two would be laymen. Therefore the elected members could not be in a minority as against the representatives of the Universities, and if the General Dental Council so wished, because these four would be a minimum, they could be in a majority."

Accepting the Minister's offer, Mr. Vaughan-Morgan withdrew his amendment.

Approval was given to a Government amendment to increase the membership of the experimental Ancillary Dental Workers Committee by two and so providing that these additional two members should be engaged in local authority health services, in hospitals, or in health centres.

Mr. Vaughan-Morgan proposed in a new clause that a person should not be entitled to take or use the name or title of "dentist" or of "dental surgeon" or "dental practitioner" or use a description implying that he was a registered dentist. The clause proposed liability for contravention on conviction on indictment to a fine not exceeding £500 and on summary conviction to a maximum £100 fine.

Mr. Macleod said: "I recommend the principle of the proposed new clause to the Committee. It is true that the 1921 Act did not work as well as it should have done. Seeing that we are protecting by the Bill the titles of ancillaries, it is reasonable for the dental profession to desire to have a clause similar to the one which has been moved."

The proposed clause was withdrawn on the Minister's undertaking to introduce later a clause in the same sense.

The Committee stage of the Bill was concluded. (*T. Nov. 22.*)

BOOK REVIEW

ATLAS OF CLINICAL PATHOLOGY OF THE ORAL MUCOUS MEMBRANE. (A Practical Approach to Diagnosis.) By BALINT J. ORBAN, M.D., D.D.S., Professor of Periodontics, Loyola University School of Dentistry, Chicago; and FRANK M. WENTZ, D.D.S., M.S., Ph.D., Associate Professor of Periodontics, Loyola University School of Dentistry, Chicago; and Contributors. 11 × 8½ in. Pp. 135, with 228 illustrations, 72 in colour. 1955. London: Henry Kimpton. 90s.

This book is a newcomer to the dental bookshelf and a first perusal shows that it brings with it a new and stimulating style of presentation. A more critical examination, however,

reveals a tendency to oversimplify and to attach disproportionate values to the relative importance of things. The authors appear to recognize these shortcomings, for in the preface they quote the adage that "The first edition of a book should never be published". We should be glad that this did not deter the authors, because this young book shows every sign of growing up to become a useful and respected inhabitant in the library of anyone interested in oral pathology.

The text is divided into two main parts: The first and smaller part deals with general diagnosis procedures, from history taking through examination to biopsy and other

technical procedures. Most of this material is presented in a brief enumerated form and, while possibly of value as an *aide-memoire*, cannot pretend to be instructive. A number of tables then follow, which in turn attempt to differentiate those lesions which fall under the headings of "white", "ulcerative", "bulbous", "discolorations", etc. This first section is concluded with an excellent set of illustrations of normal clinical and histological appearances.

The second part of the book consists of the Atlas of Pathology, and the arrangement of lesions follows a classification which is primarily aetiological. In this there are some obvious imperfections, but these must be excused on the grounds that all classifications in medicine are open to criticism and no claim is made on this occasion than to provide an aid to diagnosis and understanding of the pathogenesis of disease.

There are 70 illustrations in colour of clinical conditions and 1 colour picture of a culture plate, but no colour has been used to illustrate histological material. Many conditions would have benefited by this, the photomicrographs illustrating eosinophilic granuloma being a good example. The great majority of the colour plates are of the highest quality, but it

is surprising how many are out of focus. The criticism, moreover, is not limited to those conditions which are rare, and can be made after due allowance for the limited depth of focus inherent in this field of photography.

Not surprisingly, confusion exists in regard to the epulides. The diagnostic table links pyogenic granuloma with the pregnancy tumour, but the text of the atlas gives pregnancy tumour as a differential diagnosis of pyogenic granuloma, so that the authors' intent is not easily discerned. Furthermore, the lesions of localized inflammatory hyperplasia and localized fibrous hyperplasia ("fibromas") are dealt with as two distinct entities in different sections of the classification whereas they surely represent in most instances different phases in the natural history of one underlying pathology.

In most instances the text relating to each condition is too brief to be of great value and this is particularly true with regard to treatment. However, as a visual supplement to the more standard works the atlas has an undoubted claim to an established place in dental literature.

J. A. P.

EXAMINATION RESULTS

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Nov. 10, 1955.

DIPLOMAS have been granted as follows:—

Diploma of Fellowship in Dental Surgery:—
Dresner, John, B.D.S. Witwatersrand.

Diploma of Licentiate in Dental Surgery:—

Allen, Nigel Stafford David; Armitage, Brian; Atkinson, Alan Stanley; Attwood, Albert Douglas; Aubrey-Slocock, Anthony Oliver; Bar, Norman; Bassett-James, Trevor Basil; Beeching, Brian William Grainger McGregor; Bergman, Alan Julian; Berwick, William Alistair; Blood, Brendon Geoffrey; Bradley, Alan John; Brooke, Alan Pearson; Budd, Geoffrey Francis; Clayton, Michael John; Clifton-Samuel, Anthony David; Cooke, Neville Roy; Crawford, Anthony Clemmey; Crouch, Derek Frank; Davies, Vivian; Davison, Murray Russell; Emanuel, Ivor; Finney, Peter John; Gillespie, George Maclean; Goodbourn, Richard Henry John; Goodman, Brian; Gould, Maurice Stephen Eliot; Grant, Norman; Grice, Alan Richard; Hall, Jean Macfarlane; Harris, Colin Wilson; Harris, John Rutter; Harris, Richard Gwilym; Haselden, Frank Gordon; Hobbs, David Melfont; Holmes, Brian; Hougie, Edward; Hunt, Howard Hayden; Irwin, John Michael; Johns, Richard Bell; Jones, Stanley Prenton; King, Russell Frederick;

Knight, Malcolm Charles; Labuschagne, Nicholas Arthur; Lawrence, David Munro; Madan, Satya Paul; Marks, Brenda; Mitchelson, Jeanette Mary; Mitchener, Noel Martin; Mockett, Richard Sherwood; Mortimer, Keith Verpon; Ogden, Dennis Richard; Osborn, George Sidney; Osborn, Jeffrey Whittaker; Payne, Ralph Michael William; Petrie, John Gilbert; Pollock, Paul Watson; Prince, Ronald; Riley, John William; Rothschild, Maurice Bernard; Schrotter, Anna Gabriele; Schwarz, Walter David; Scott, Derek; Segerdal, Michael John Nicholas; Seiff, Viorica; Singer, Hugh Roland; Solomon, David; Stevens, Roderick Duncan Gambrell; Van Coppenhagen, Frederick Cloete; Wagerman, Peter Henry; Waterhouse, John Percival; Weiss, Eleonore; Wheeler, Alec Dennis; Wigdor, Ronald John; Wild, Anne Vivienne; Willcocks, Pat; Willis, Michael Francis Hubert; Wolffe, John; Zamet, Saville John.

UNIVERSITY OF GLASGOW

Nov. 5, 1955.

THE degree of **Bachelor of Dental Surgery (B.D.S.)** has been conferred upon the following:—

Baird, George; Clark, Peter Lindsay; Feldman, Abraham; Hawthorn, Eric Watson; Hawthorn, Iain Hay; Leishman, Ian Macdonald; Lumsden, James Fordyce; Macfarlane, James; McGrady, William; MacLachlan, David Connor; McLennan, Donald Campbell; Patrick, Hugh Hamilton; Shearer, Basil Wallace.

NATIONAL HEALTH SERVICE NOTES

Professional and Technical Whitley Council "B"
Dental Technicians

1. The following agreement relates to the salaries of dental technicians excluding apprentices employed in England, Wales, and Scotland by Regional Hospital Boards, Hospital Management Committees, Boards of Management, Boards of Governors of Teaching Hospitals, Local Health Authorities, and Local Education Authorities. The salary scales replace those which were set out in paragraphs 2 (b)-(f) of P.T.B. Circular 27. The provisions of paragraphs 7, 8, and 9 and Part II of P.T.B. Circular 27 remain effective.

2. (a) Dental Technician

The all-round craftsman who normally has completed 5 years' apprenticeship and who is able to undertake the ordinary processes of a dental laboratory without direct supervision.

£410 × £15(4)—£470 × £20(2)—£510.

(b) Senior Technician

The dental technician who, in addition to being a good all-round craftsman, is specialized in and is able to carry out crown and bridge technique of an advanced nature or orthodontic work, and is called upon to carry out such work.

£485 × £15(4)—£545 × £20(2)—£585.

(c) Senior Technician in Charge

The dental technician who is in charge of a technical staff of not less than one and not more than five dental technicians (including Apprentices).

£505 × £15(5)—£565 × £20—£605.

(d) Senior Technician (Surgical)

The dental technician who has exceptional skill in the construction of maxillo-facial, plastic, or general surgical appliances and is normally employed on such work.

£505 × £15(3)—£550 × £20(4)—£630.

The rates for apprentices are still under discussion and for the time being the rates in paragraph 2(a) of P.T.B. Circular 27 still apply.

Hospital Dental Staff: Terms and Conditions of Service

Summary. This Memorandum extends to hospital dental staff provisions which have already been made for medical staff in regard to (1) the remuneration of locums engaged on a whole-time basis to fill specialist posts; (2) the Sick Leave Scheme; and (3) the remuneration of certain consultants who held distinction awards at April 1, 1954.

Service Committees and Tribunal Regulations, 1948

The name of Albert William Keith, 14, Grenville Road, Lostwithiel, Cornwall, must not be included in future in any Dental List until the Tribunal or the Minister directs to the contrary.

MINISTRY OF HEALTH

Fluoridation of Water Supplies

Before authorizing the four demonstrations of the fluoridation of water supplies which are being arranged in England and Wales, the Minister of Health made a close study of the medical research on the subject which had been carried out in America, and satisfied himself that there was every justification for the demonstrations. He thought it right to give the Standing Medical Advisory Committee an opportunity of putting their own views on record, and he has now been advised that:

"Despite many years of observation and investigation there is no scientific or medical evidence at present available suggesting that there is any risk in drinking water containing added fluoride in the concentration of one part per million."

Procedures for Adequate Radiograph of
Pre-school Children

A detailed account is given of a method for routine radiograph of pre-school children.

Exposure time may be reduced by using high-speed film, increasing the voltage, or prolonging the developing time.—HAYDEN, J. and RICHARDS A. G. (1955), *J. dent. Child.*, 22, 70.

LETTER TO EDITOR

Oct. 19, 1955

Dear Sir,

I have been reading your periodical since its first issue. I usually find it most interesting and instructive. One reason for its usefulness is that it frequently offers articles on subjects not usually dealt with in dental literature.

There is one subject which is very meagrely discussed, both in text-books and journals, so maybe you could print an article or a series about it in the future.

I refer to dental ailments in children, particularly those up to seven years old. There seems to be little information about palliative measures for teething troubles, either surgical or prescription of remedies; premedication for general anaesthesia in these cases; choice of anaesthetic; premedication for filling appointments, etc.

There is plenty of theory and advice about fillings and extractions, but little about these important matters which relate to these operations.

Yours faithfully,

J. F. KINNEEN.

11, Mardyke Street,
Athlone.

SOCIETY NOTES**THE DENTAL IMPLANT SOCIETY
OF GREAT BRITAIN**

The Annual General Meeting of the Society was held at 109, Harley Street, London, W.1, on Thursday, December 15, at 7 p.m.

**FEDERATION DENTAIRE
INTERNATIONALE**

News Letter No. 12 (October, 1955) contains a message from the new President and reports on the Forty-third Annual Meeting, Copenhagen, August 14-20, 1955.

It also contains a report on the special meeting of the F.D.I. at the Second Panhellenic Odonto-stomatological Congress, Athens, September 25-30, 1955. Other subjects dealt with include the twelfth International Dental Congress, Rome, September 7-14, 1947; *International Dental Journal*; F.D.I. representation at meetings; the W.H.O.: Provisional programme of the Forty-fourth Annual

Meeting, Zurich, May 28-June 3, 1956; and news from Member Associations.

**THE INSTITUTE OF BRITISH SURGICAL
TECHNICIANS (INC.)**

The following lectures will be given under the auspices of the Dental Section of the Institute of British Surgical Technicians:—

"Spring for Removable Appliances", by Mr. B. C. Leighton, L.D.S. (Eng.), H.D.D., D.D.O. (Glasg.), on Tuesday, January 24, 1956, at 6.30 p.m. at the Royal Society of Medicine, 1, Wimpole Street, W.1. Tickets are obtainable on application with stamped addressed envelope to the Institute.

"Occlusal Rests", by Professor J. Osborne, M.D.S., Ph.D. (Sheff.), F.D.S. R.C.S., on Thursday, January 26, 1956, at 7 p.m. in the Lecture Theatre, General Hospital, Steelhouse Lane, Birmingham 4. Tickets on application with stamped addressed envelope to the Area Secretary, 8 Hillside Road, Erdington, Birmingham 23.

ABSTRACTS FROM OTHER JOURNALS**Does Functional Effort Affect Caries Activity?**

A hard resin base was supplied to children of nursery school age in order to induce them to chew vigorously every day. Their rate of caries was considerably lower than control children of the same age.

It is suggested that the resistance of the enamel can be increased by changes in crystal structure due to compression under heavier loads.—NEUMANN, H. H., and DiSALVO, W. A. (1955), *J. dent. Child.*, **22**, 151.

A Stainless-steel Spur-type Space Maintainer

Seventy per cent of all second molars lost prematurely from the deciduous dentition are followed by mesial drift of the first permanent molars, with resultant malocclusion. When they are lost before eruption of the first permanent molar, space maintenance is difficult. A direct method of constructing a fixed space maintainer either directly or indirectly

using a preformed stainless steel crown is described. The crown is fitted to the first deciduous molar and a stainless steel spur is soldered to it, which dips into the socket of the extracted second molar to engage upon the mesial surface of the unerupted first permanent molar. The mucous membrane heals around it without complications.—CALVERT, J. (1955), *J. dent. Child.*, **22**, 92.

Orthodontics by Extraction

Crowding in the upper or lower premolar and canine regions can be eliminated without the use of appliances by the extraction of the canine or one of the premolar teeth. The extraction of the canine is recommended only in rare cases. The teeth of choice are usually the upper first premolar and the lower second premolar, although the ultimate decision depends upon the individual circumstances.—DAVIS, M. (1955), *J. dent. Child.*, **22**, 66.